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THE PART OF STATE HEALTH DEPARTMENTS IN SCHOOL HYGIENE PROGRAMS*

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SCHOOL hygiene can be divided into five component parts: (a) School sanitation; (b) the control and prevention of infections; (c) the application of certain measures of hygiene, preventive medicine, and corrective surgery for the benefit of the individual pupil, which we will call "medical supervision"; (d) physical education; (e) the teaching of the principles of personal hygiene and the inculcation of health habits.

This grouping does not cover all aspects of the subject and it might be a bit difficult to allocate certain important topics, such as mental hygiene or nutrition, in such an analysis. But for our present purpose it will serve as a method of division of the subject.

Whenever consideration of school hygiene as a whole is attempted, two fundamentally divergent views relative to the basic principles of administration of the subject quickly come to the surface. One maintains that the general planning, development and routine administration of the whole subject should be in the hands of the health departments. The other view holds with equal conviction that the entire field is essentially one for the school departments to cover.

Heated discussions, hundreds of scientific papers, and a divergence of governmental policy throughout the country mark the long continued controversy over this point. All the arguments in favor of the first view come down to the essential contention that it is the duty of the health department to guide and foster the health of the individual from before birth all through the whole life span; that during the school age itself the child is only six hours of the 24, five days out of the seven, and approximately 8 months of the 12, under the control of the school authorities, and hence that it is absurd to consider that any other governmental agency should administer what is essentially a health department function.

On the other hand, the supporters of the second view hold with corresponding conviction that during school years and school time the task of handling the child in relation to the school system is the task if the educator and cannot be logically divided up with any other outside agency, health departments not excepted, and that to do so interferes with the proper adjustments and functioning of the school system as a whole.

It is important to remember that in this country, at least, school hygiene, however administrative responsibility for it may be allocated within the community, is like all other phases of public school activities essentially a local or community responsibility rather than that of either

* Read before the New England Health Institute at Boston, Massachusetts, May 7, 1925.

the state department of education or state department of health.

With these three preliminary considerations indicated as always to be kept in mind, our task for the present is the interesting but by no means easy one of attempting to determine just what part a state health department can or should have in the planning, organizing, developing and routine functioning of a statewide practical system of school hygiene.

Although it may seem a rather indirect method of approach to our topic, the most useful first step towards it is to return to the five component parts of the general structure of school hygiene and consider just what groups, professions, governmental departments and individuals are most directly concerned with each.

SCHOOL SANITATION

The importance of our first factor—school sanitation—was the first point stressed in the early literature of school hygiene. Here and there individuals may have had some glimmering of the possibilities that we now all see in the other phases of school hygiene, but practically all the earlier work on school hygiene concerned itself with environment, especially in reference to such matters as ventilation, heating, air space per pupil, toilet arrangements, seating, and a little later as the significance of eye strain became better appreciated, with particular emphasis upon lighting.

All of these things are still of vital concern to school hygiene. The point I wish to make clear just now, however, is that when the school building is once erected, neither the child, the teacher, the school superintendent, nurse or physician, nor city or state departments of education or health can materially modify many of these factors short of abandonment of the school structure. In the hands of two professions particularly we find ourselves in relation to this matter, the engineers and the architects. A few states have wisely, I think, recognized the far-reaching effects of school buildings and surroundings on the health and development of the child by requiring approval of all plans of new school buildings by their state departments of health.

CONTROL OF INFECTION

The field of the second factor—the prevention or control of infection—is where the responsibility of three professions is a heavy one, the physician, dentist, and nurse. Practical measures in this field must at once bring in the local board of health, whether in direct administration or as an agency coöperating with a staff of school physicians appointed by and working under the authority and direction of the school boards. The obvious responsibility in this field of the medical and allied professions as the source of the technical staffs, and of the public health department as the agency of the community for invoking the police power authority that lies back of all our routine communicable disease procedures, has seemed in many cases to cause school authorities, teachers and parents to overlook the very great moral responsibility that rests upon them to coöperate cheerfully and willingly in order to make communicable disease work in the schools measure up in fair degree of actual accomplishment to its full potential effectiveness. But state health departments do not directly appear in this phase of school hygiene at all.

MEDICAL SUPERVISION

When consideration is given to the next group of school hygiene functions—those which we have called for brevity's sake "medical supervision," which includes general physical examinations, dental work, fitting of glasses, and to a certain extent posture and preventive orthopedic work, a considerable part of nutrition service and several other activities—the situation materially changes. Here there is much less argument to be brought forward in favor of connecting this work directly with the board of health than is the case concerning communicable disease

control. It is true that for the technical direction and actual work that these same professions, medicine, dentistry and nursing, must be relied upon as much as in the control of infections; but there is no reason why they cannot do this work directly under the school department as well as through the health department, and in many particulars there is great and obvious advantage in this connection. But here the coöperation of the parent and the active encouragement of the parent by the teachers must come more into play if adequate results are to be forthcoming, even far more than in the case of communicable disease control.

PHYSICAL EDUCATION

When we consider the practical working out of a well developed system of physical education, we find a considerable change in the essential participants. Here medicine drops into the background, dentistry and nursing drop out of consideration entirely, and a new technical group, the trained teachers of physical education, become the central factors for the successful achievement of lasting beneficial results so far as the technical direction of the subject is concerned. But mark well that the coöperation of the pupils themselves here becomes a much more important consideration. No longer can they play a totally passive part, as they must to a great extent in communicable disease work, or take but a minor share of active participation and still have real results forthcoming as is partially possible in dealing with problems of medical supervision. The child now becomes an active coöperative partner sharing with the physical training teachers the responsibility for results.

TEACHING PERSONAL HYGIENE

Next we come to consider the last of our five great divisions of school hygiene —the teaching of the principles of personal hygiene in such fashion that these principles become a part of the everyday habits of the pupil at the same time that he is learning to appreciate the nature and significance of good personal and community hygiene. This is the capstone of our present-day school hygiene structure. Without it much of the value of good work done in the other divisions of our subject is lost. With it once thoroughly ingrained in several successive generations of school children, more real sanitary advance will be registered than can be brought about by all the activities of our present health departments and sanitary laws and regulations combined.

We are as yet but dimly beginning to grasp the significance or the technique of application of the "health habit" movement although the subject is increasing in prominence by leaps and bounds among both sanitarians and educators every year. But here it is clear that the greatest load must rest upon the regular teaching staff of our schools, particularly the teachers of the first five or six grades. Here also the active participation and interest of the pupils themselves are absolutely necessary for success. Medicine, biology, and chemistry must supply the underlying scientific bases for this work. Physicians, dentists, nurses, nutrition workers, physical educators and psychologists can largely assist in showing how such principles can be applied in a form suitable for mental assimilation by the children so as to create an habitual application. Parents, school authorities and health authorities can aid indirectly by giving these measures their encouragement and moral support.

So to capitulate briefly: More or less arbitrarily visualizing the whole field of school hygiene as coming under five general heads, we can say that the first, school sanitation, is largely in the hands of the architect and the engineer, with the school executive authorities and health department authorities more or less in the background but exerting great influence.

The second, communicable disease control, is in the hands of the health departments in the last analysis, regardless of whether work in this subject within the

schoolroom is done by them directly or not.

The third, medical supervision, is in the hands of physicians, dentists and nurses, who may be directly appointed either by boards of health or by boards of education. In certain states, as in Massachusetts, special clinics for the furtherance of these types of school hygiene service must by law be placed under the control of the boards of health if maintained by public funds.

The fourth element, physical education, is practically always in the hands of the school authorities and largely carried out by a highly specialized group of teachers just as is the instruction in such cultural subjects as music or drawing, although the regular teaching staff may very actively be called upon to assist.

The fifth subject, "health habit promotion," has not yet become fixed as to status in school curricula and unfortunately does not exist as yet in even the most rudimentary form in most of our schools, but, if at all developed, it is invariably in the hands of the teachers, with some coöperative assistance from the school nurses and nutritionists and dental hygienists where such specialists are available.

From the foregoing it is not difficult to understand why American policy as to which department should be held primarily responsible for school hygiene—the health department or the school department—is not yet crystallized. To my mind, the trend is towards placing such responsibility upon departments of education, but there are important phases of school hygiene, particularly those coming under our first two heads, which can never be entirely divorced from the purview of health departments.

As emphasis is placed more and more on the last two subjects, physical education and health habit formation, it is obvious that these are essentially pedagogical in character. The great middle subject which we have called, for lack of any better short descriptive term, "medical supervision," is a common meeting ground of the specially trained physician, dentist and nurse working very closely with the teacher. The tendency is for this phase of school hygiene to become more and more definitely incorporated in the educational departments. This statement is true in spite of the fact that in some of the largest cities of the country conspicuous for their fine character of school hygiene work, as New York and Philadelphia, for example, all these matters are handled directly by the health departments.

THE STATE'S PART

Now we come to the subject of state governmental relationship to school hygiene and thus finally to the subject actually assigned.

The first principle to keep in mind is one already touched upon, *i.e.*, that schools and everything pertaining to schools are essentially local or community matters and must always be approached as such if real lasting results reflecting the ideals of the community are to be obtained.

Secondly, it is equally desirable that there be established certain uniform standards in school hygiene for all communities of the state as a whole, just as there are standards for determining what persons shall be eligible to teach in the public schools of Massachusetts or minimum state requirements as to fire prevention which must be observed by local school authorities.

It may be said that in most states in this country where state-wide laws pertaining to physical education are in effect the state departments of education usually control the policies developed under them. These departments also often promulgate minimum standards in such matters as school sanitation and general "medical supervision" as is the case in New York and Pennsylvania.

But in some states the departments of health are by law made responsible for standards of school sanitation, for con-

trol of communicable disease, for general medical supervision standards, as in Virginia and Kentucky for instance, but in no state to my knowledge does the department of health have general supervision of health educational work in the public schools.

To my mind, what is most needed in all states and in all communities is less discussion as to who shall control school hygiene procedures and more voluntary getting together by departments of health and education, whether state or local, to see how they jointly can best contribute to the advancement of this whole vital subject.

This very method has been tried out in Massachusetts for the past decade by the State Departments of Education and Public Health, with growing cordiality and growing realization by the staffs of both departments of the extent to which we are dependent upon each other to render our individual efforts and advice appreciated and sought by the local authorities responsible for the practical administration of school hygiene measures.

In Massachusetts it so happens that neither state department is given such statutory authority in these matters as has just been cited for certain other states, yet we are on the whole making good progress in elevating the standards and quickening the interest of local school and health authorities in all matters pertaining to school hygiene.

There is a considerable volume of law in Massachusetts in which schools, medical science and health departments are in some way associated covering such requirements, for instance, as vaccination of school children, age of school attendance, provision for mental examinations, appointment of school physicians and nurses, and relative to duties of school physicians; but the direct statutory mandate upon which the fairly definite joint working policies of the State Departments of Education and Health rest is extremely brief. This is comprised in two sections of the general laws which state that each school committee shall cause a physical examination to be made annually of each child in a public school "to ascertain defects in sight or hearing and other physical defects tending to prevent his receiving the full benefit of his school work, or requiring a modification of the same in order to prevent injury to the child or to secure the best educational results."

It is also provided that the tests for sight and hearing shall be prescribed by the State Department of Public Health and that the *form* in which physical records of school children are to be kept shall be prescribed by the State Department of Education, which department shall also, *after consultation with the Department of Public Health*, prescribe and furnish to school committees suitable rules of instruction, with cards, blanks, record books and other useful appliances for carrying out the purposes above indicated.

It is surprising how far this power of the State Department of Education to fix the form of physical examination record after advice with the Department of Public Health has led us in providing a joint advisory service to *all* local authorities responsible for school hygiene procedures. To further this service we have built up in the Department of Public Health within the Division of Hygiene a small but efficient corps consisting of one physician and two nurses, who devote all their time to the study of school hygiene methods prevailing in the various communities of the state and to advising the local school committees, superintendents, physicians and nurses either directly or through the State Department of Education as to the methods by which they may obtain a better type of school hygiene program for their schools.

In addition, yearly conferences, sponsored and held jointly by the two state departments in various centers throughout the state, to which school physicians, school nurses and general school executives, *i.e.*, superintendents and principals,

are invited, have proved a most popular and valuable means of promoting better school hygiene practice.

From time to time special joint announcements with reference to matters affecting duties of school committees are sent out by the two departments and occasionally special conferences are held on particular local problems which may arise, following which advice is sent to the community concerned.

Another interesting illustration of the practical benefits made possible by the active coöperation of the two departments is the following:

The staff of the Department of Public Health in collaboration with the regular faculty offers a course for school nurses at the summer session of the Hyannis Normal School, which has been very much appreciated, and for the next session we plan to offer also under similar arrangements a brief course in school hygiene for teachers.

There is a very brief written working agreement between the two departments by the terms of which the Department of Public Health obligates itself to furnish at any time to both the Divisions of Elementary and Secondary Education of the State Department of Education and to the state normal schools of that department technical advice on matters pertaining to school hygiene. It is also provided that either through the district health officers of the Department of Public Health or directly that the Division of Hygiene will, upon request of the local authorities, give advice and make suggestions as to local needs in school hygiene. Additional paragraphs of this agreement provide for the holding of the joint conferences already described and guarantee to the State Department of Education the assistance it is entitled by law to request of the State Department of Public Health in order to carry out the duty imposed upon it of prescribing the form or method of making and permanently recording the results of the annual physical examination which the law requires the local school committees to carry out.

It is the joint opinion of the staffs of the Departments of Education and Public Health of Massachusetts based on our ten years' experience in matters pertaining to the state-wide development of school hygiene:

1. That the subject can best be developed primarily on a decentralized basis but holding all communities uniformly responsible under statute for certain minimum requirements relating to personnel, to equipment, and to teaching methods, and encouraging the local authorities to add to these minimum facilities as fast as public sentiment, funds and specialized personnel are available.

2. That based on these fundamental premises the state departments can most effectively promote the development of school hygiene by the following measures which can be considered merely as a tentative list of the useful activities that state departments may with profit enter into in this field and which have proved most useful in our hands for our own state. These are:

(a) Outlining jointly by the two state departments broad general suggestions for the guidance of local school or health authorities for the building up of their school hygiene systems.

(b) Furnishing expert technical advisers to local authorities on request.

(c) Preparing educational material, especially in connection with "health habit" teaching, for utilization by local authorities.

(d) Conducting conferences on school hygiene.

(e) Offering special courses in school hygiene in connection with the regular or summer sessions of the state normal schools.

(f) Preparing uniform forms and records for use especially in recording physical examinations for public schools.

CONCLUSION

In conclusion I wish to offer for your careful consideration a thought expressed by my colleague, the State Commissioner

of Education of Massachusetts, just a few days ago in discussing the content of this address. He said, in substance: "School hygiene is a subject wherein it is necessary if any real progress is to be achieved that there be a certain degree of state control of standards in certain essentials to bring about a degree of uniformity in procedure, but outside of this the less state control of detail and the less mandatory authority invested in the state authorities the better, and our experience seems to show that in many phases of school hygiene actual substantial progress is made faster without actual statutory control than with it." In other words, the very fact that we cannot *order* local health or educational authorities to carry out any particular procedure or policy in school hygiene seems to make them all the more willing and eager to ask through the State Department of Education for the technical advice and guidance that the State Department of Public Health is in a position to furnish, and that they then follow that advice with enthusiastic interest so far as the local resources will permit.

DIRECT CULTIVATION OF THE MYCOBACTERIUM TUBERCULOSIS*

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SINCE THE TIME the mycobacterium tuberculosis was discovered many methods have been described to make the demonstration of this microbe in sputum, urine, pus, etc., as easy as possible. The direct cultivation from sputum was described by Koch and Kitasato: the pus-particles of a tuberculous sputum were washed repeatedly in sterile salt solution and then transferred to glycerolated serum. Uhlenhuth succeeded in cultivating the mycobacterium by spreading the sediment of the sputum, after it had been homogenized with antiformin, on serum-media. Hess tried to inoculate the pus from tuberculous sputum on agar with glycerol and calodal (Nährstoff Heyden) and observed a marked increase in amount of growth of the organism in a few hours or a few days.

In our experiments a comparison was made of the newer culture-media, which have been recommended for the cultivation of the mycobacterium tuberculosis. Besides the glycerolated blood-serum we used Besredkas broth,[1] egg medium of Dorset,[2] and the media of Lubenau, Griffith,[3, 4] Petroff,[5] and Lyall.[6]

The purpose of our investigation was to find out which of the culture-media named would give the best results when applied to the method of direct cultivation. As stated in our previous papers[7] the results of the direct cultivation from sputum with the antiformin method as described by Lyall, were very satisfactory on all the egg-culture media. A well marked growth was demonstrated microscopically in 4 to 10 days. Samples of the sputum, however, very often contained bacteria resistant to the bactericidal and lytic effects of antiformin and also a peptonization of the culture-medium interfered with the growth and detection of the tubercle bacillus. This happened quite often in Lyall's as well as in Dorset's and Lubenau's culture-medium. In Petroff's medium this difficulty was less marked, the disadvantage of this medium being its slow and delicate preparation.

* Synonym: Tubercle bacillus. Bergey's Manual of Determinative Bacteriology, page 373.

Presuming that egg, especially the yolk, is the most important constituent of a medium used for direct cultivation, we tried to compose a culture medium which would not be colliquated by the contaminating bacteria. We prepare this medium in the following way:

1. Fresh eggs are thoroughly washed with 5 per cent phenol, the flamed ends perforated with a sterile forceps, the contents poured into a sterile Erlenmayer flask and mixed thoroughly.

2. A beef infusion is prepared in the usual way, filtered, 2 per cent agar-agar added without neutralizing and sterilized in an autoclave at 15 lbs. pressure.

To every 100 c.c. of the beef infusion agar dissolved and cooled to 60° C. the contents of one egg are added. The well mixed egg-agar is then poured into sterile test tubes (or Petri dishes) and heated at 85° C. for one hour. For this heating the apparatus for the coagulation of Loeffler serum should be used.

This simple egg-agar culture medium proved to be very satisfactory for the primary cultures in the direct cultivation of the mycobacterium tuberculosis.

Material	Number of Cases	Positive Microscopically	Negative Microscopically	Positive Culturally	Negative Culturally
Urine	65	8	57	21	44
Pus	26	6	20	20	6
Sputum	18	14	4	14	4

The results of the cultivation are shown above.

The result of the urine examinations certainly would have been much better, if only samples from tuberculous patients had been sent for cultivation. As this was not the case many samples were examined from patients not even clinically suspected of having tuberculosis.

In the direct cultivation of the organism Lyall's antiformin method was used in every case, antiformin being added to the sputum to make a solution containing 10 per cent antiformin. Fifteen minutes after antiformin had been added and the mixture thoroughly shaken the first inoculation of the egg-culture media was made, and afterwards 6 to 8 slants of the medium were inoculated every five minutes. The last inoculation was made one hour after antiformin had been added.

In the examination of urine and pus, if no growth occurred when the material was planted on an agar plate, the sediment of the urine or several loops of the pus were planted on the egg-medium. On the other hand, when the material showed contamination with other bacteria, the antiformin method as described above was employed.

The cultures were kept in the incubator at 35° C., the first microscopical examination being made on the fourth day, and if no mycobacteria tuberculosis were found in stained preparations, the examination was repeated at intervals of 2 or 3 days. The cultures must be kept in a wet chamber consisting of a close fitting glass dish in which a small cup filled with water is placed. No cultures were discarded before 21 days after the inoculation.

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THE RÔLE OF THE STATE IN INDUSTRIAL HYGIENE*

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IN KEEPING with the policy of the Committee on Industrial Hygiene Extension to limit its work this year principally to fact-finding, I have endeavored to ascertain just what the several states and territories are doing in an official way in this field. I decided to go directly to the main founts of information in each state, *i.e.*, the chief sanitary officers. I therefore addressed a circular letter first to each state health officer or commissioner and, where indicated, to various state labor departments. Within some two weeks I secured definite replies to a short questionnaire from 30 of the 48 states, also one from Dr. De Vighne, Commissioner of Health of Alaska. A second personal letter to the balance brought definite answers from 10 more states and Hawaii. The total replies are therefore from 40 states and 2 territories. In addition to this, Assistant Surgeon General B. J. Lloyd of the United States Public Health Service supplied me with information as to the reporting of occupational diseases by the various states to the Service, including a synopsis of the statutes or regulations providing for such in each state.

The questionnaire included the following five inquiries and asked for copies of any relative printed matter, particularly that bearing upon organization and administration:

1. What is your state doing officially in the matter of industrial hygiene, including the supervision of such features as ventilation, illumination, industrial poisons, control of dust, overheating, and other health hazards to employes in work places?
2. Under what department or division of government is such work carried on?
3. What is the nature of the personnel doing this work—physicians, engineers, factory inspectors, etc.?
4. Is such personnel full-time or merely taking on questions of industrial health matters as they arise in the course of other regular duties?
5. To whom are occupational diseases reported in your state?

The follow-up letter again explained the purpose of the inquiry and varied from this in that the first question was stated as follows: 1. What is your state doing officially in the matter of the supervision of industrial hygiene?

I desire to give here only summaries of such information as was accumulated by this method of inquiry and to state that I do not believe that my inquiry is complete, but that it is of positive character so far as it goes.

No replies were received from the following 8 states and 2 territories: Arkansas, Florida, Idaho, Iowa, Mississippi, Nebraska, Nevada, New Hampshire, Philippine Islands, and Porto Rico.

It is to be regretted that no information was received from these, as all certainly have some industrial mercantile establishments, if small, while others have extensive mining or lumbering interests, in which the health of workers is a worthwhile question.

In answer to the question 1, it was stated that "nothing" or "practically nothing" or "very little" was being done

* Read before the Industrial Hygiene Section of the American Public Health Association at the Fifty-third Annual Meeting at Detroit, Michigan, October 21, 1924.

[Editor's Note.—This is the fifth paper to be published from the Symposium on the Extension of Industrial Hygiene. *A. J. P. H.*, March, April, May and July.]

in the supervision of industrial hygiene (as defined) in 16 states: Alabama, Arizona, Colorado, Delaware, Georgia, Indiana, Louisiana, Maine, Montana, New Mexico, North Carolina, North Dakota, Oregon, South Carolina, South Dakota, Wyoming, plus Alaska and Hawaii.

Very little is being done, therefore, in the 24 states in these two lists. The two other insular possessions—the Philippine Islands and Porto Rico—are omitted, but definite information concerning them may yet come to hand.

Furthermore, I think I am safe in inferring from the incomplete or indefinite replies received that very little is being done in at least seven more states. The identity of these will be withheld for the present for fear they may have some activities which escaped this inquiry and are not otherwise known to me.

The deduction is, therefore, that 31 states, or approximately two-thirds of the total, including many of the great industrial states, are practically oblivious of the subject of industrial hygiene in actual practice. If by no others, this should be especially regretted by the tuberculosis agencies in those states because the industrial factor is declared to be the backbone of the present day tuberculosis problem.

On the other hand it may be inferred, for the time being, that something is being done in the remaining 17 states. The identity of these states will come out in the following lists. I had hoped to learn what legal provisions covering essential industrial hygiene were actually in vogue in each of these states from the analysis of statutes and regulations sent me, but these were incomplete and I soon found after examining several of those received that, with few exceptions, "seats for females" (who are not allowed to use them while at work) and similar limited features constituted most of the so-called industrial hygiene work and that no standards are set.

Everything is left entirely to judgment or opinion, to "adequate" provisions. As pointed out by Horan in a personal communication, such lack of definition probably fails to conform to the Declaration of Rights of the constitution in any given state, in that "no subject shall be held to answer for any crime or offense until the same is fully and plainly, substantially and formally described to him." He cites an interesting case in point which was lost because of this situation (United States vs. L. Cohen Grocery Co., 255 U. S. 81). Regulations must offer definite measurements to guide the employer. This, coupled with the fact that such "adequate" provisions are judged by a personnel concerning which no qualifications are specified in the statutes or regulations, *i.e.*, in all but half-a-dozen states, should suffice to show the seriousness of the *inadequacy* of practically all provisions.

As to question 2, 27 states reported (in some cases suggested) that the department of labor (or equivalent department) had official supervision and enforcement of this work (were there any), while 5 states and the District of Columbia also specified that the health department had such function. These states are shown below.

It will be noted that duplicate supervision appears to obtain in Kansas, Maryland, Ohio and Texas. As regards Ohio, the supervision of the Department of

SUPERVISION OF INDUSTRIAL HYGIENE WORK

Labor Department *			Health Department
California	Minnesota	Rhode Island	District of Columbia
Connecticut	Missouri	Tennessee	Kansas
Illinois	New Jersey	Texas	Maryland
Indiana	New Mexico	Utah	Ohio
Kansas	New York	Vermont	Texas
Kentucky	Ohio	Virginia	Wyoming
Maryland	Oklahoma	Washington	
Massachusetts	Oregon	West Virginia	
Michigan	Pennsylvania	Wisconsin	

* This heading includes other titles such as Labor Boards, Industrial Commissions, Public Welfare Board, etc.

Health over questions of industrial hygiene is purely advisory to the Department of Industrial Relations, and even this function is more assumed than legally specified. In Maryland, sanitation* is supervised by the health department.

In reply to question 3, the responses from all states except the few mentioned below were merely to the effect that factory inspectors or "trained" factory inspectors were employed. In some cases the number of both men and women inspectors was given. Obviously, these are the usual safety, sanitary, female or child labor law inspectors, making weekly and monthly more or less stereotyped inspections and reports, a hard working, poorly paid group of public servants, some under civil service but most largely subject to the methods of political patronage. These inspectors will generally admit that little of their time or attention is given to the subjects mentioned under question 1. In the replies received, the matter of qualification or training for supervision of the factors constituting industrial hygiene was seldom answered. This would leave us to infer, added to what we commonly observe, that comparatively few have had any technical, academic or other training than "practical experience," which, as someone has recently pointed out, often means promoting whims or the practices of forefathers rather than applying up-to-date scientific methods which are the foundation of successful business today. However, it is certain that several states do employ what we may term at this time as individuals trained or professionally qualified to understand and administer industrial hygiene. Further inquiry may find a few more than are given in the following list:

Engineers—California, Kansas, Massachusetts, Michigan, New York,† Ohio, Pennsylvania,† and Wisconsin. Total, 8 states.

Physicians—California, Illinois,‡ Massachusetts, New York, Ohio, and Pennsylvania. Total, 6 states.

Chemists—New Jersey (Consulting), New York. Total, 2 states.

Other trained inspectors for certain types of hygienic supervision—Illinois, New Jersey, New York, Ohio, Virginia, and Wisconsin. Total, 6 states.

Question 4 brought out the point that while the inspectors devote a certain amount of their time to complaints regarding hygiene and sanitary questions, they are chiefly "safety inspectors," in which capacity they are on full-time. To show the relation of type of personnel to the employment, I might summarize the answers to this question as follows:

1. *Factory inspectors,* including sanitary inspectors, mine inspectors, etc., are usually full-time employes. Mine inspectors devote considerable time to the ventilation question.

2. *Practical men* are experienced and act as special deputies and district supervisors for certain hazards, such as efficiency of blower systems, etc. These are usually permanent employes and full-time.

3. *Technically trained workers* are divisible into three groups: (a) Consultants, who are usually part-time, (b) special investigators who may or may not be on full-time, and (c) other technically trained persons such as engineers, physicians, and chemists, who are usually full-time in the very few states where employed.

The fifth and last question brought out the information, checked against the United States Public Health Service's report, that occupational diseases are reported, or supposed to be reported, to labor departments in 9 states, and to health departments in 21 states.

OCCUPATION DISEASES ARE REPORTED TO

Labor Department		Health Department
California	Alabama	New Hampshire
Illinois	Arizona	New Jersey
Massachusetts	Colorado	New Mexico
Minnesota	Connecticut	Ohio
New Jersey	Illinois	Oklahoma
New York	Kansas	Oregon
Ohio	Maine	Pennsylvania
Pennsylvania	Maryland	Rhode Island
Wisconsin	Massachusetts	Tennessee
	Michigan	Wyoming
	Missouri	

* The term "sanitation" is undefined in the "Labor Laws of Maryland," Reorganization Act of 1922.

† Pennsylvania and New York each employ a chemical engineer.

‡ Illinois requires establishments coming under the occupational disease law to employ physicians who shall make monthly physical examinations of exposed employes.

The above list includes five instances in which occupational diseases are reported to both labor and health departments or by one to the other, so that 25 states is the total in which occupational diseases are reportable to some official agency. It is not to be inferred, however, that the 20 state health departments which receive occupational disease reports, or should receive them, are enforcing the reporting act, or that they have anything to do with industrial hygiene or even with making inquiries as to cause of these occupational diseases, since for the most part they do not.

Here and there certain state departments of health, acting under general statutes or regulations, may make special investigations in regard to complaints of unhealthful working conditions. This was stated to be so in California, Kentucky, Maine, and Washington and is probably so in most states. It is, of course, very apt to be so where a communicable disease, such as anthrax, occurs. As a rule, where a health department receives a complaint about working conditions there is either a real fire or someone has a grouch. The vast majority of both health hazards and occupational diseases cause no complaints to reach official ears on the part of anyone. Exactly the same situation existed in the past, however, in regard to typhoid fever, but the absence of complaints did not deter physicians, engineers, and public spirited people from recognizing the situation and insisting that the knowledge at hand be applied towards its control.

At this point, we are interested in what comes out of reporting occupational diseases either to state or labor departments. Do the regulations require that an investigation shall be made, looking toward the correction of the cause? In Ohio and several other states they do not. Even where they do, is any personnel furnished for that purpose? With a few exceptions, we again come up against the impregnable wall—nothing is done. Indeed, we seem to prefer to use such reports in the most progressive states as the basis of compensation awards and simply allow the mill to keep on grinding.

It is interesting to note that none of the labor departments report to the United States Public Health Service, but that in some states statutes require them to report to the state health department, which department in turn may report to the United States Public Health Service, through the collaborating epidemiologist arrangement requiring the reporting of notifiable diseases including occupational diseases.

According to *Public Health Reports* (Vol. 39, No. 31), for Aug. 1, 1924, p. 1886, the following 8 states were the only ones which reported occupational diseases to the United States Public Health Service during the first quarter of 1924:

Connecticut	12 cases	
Illinois	48 "	(lead poisoning)
Massachusetts	49 "	
Missouri	1 "	(lead poisoning)
New Jersey	12 "	
New Mexico	1 "	(lead poisoning)
Ohio	182 "	
Pennsylvania	8 "	(lead poisoning)

Total reports received from all states for 3 months, 313.

The above delineation leaves a pessimistic pall. There are some cheerful aspects, however. It is interesting to note that the following 10 states indicate that "organization" or "reorganization," taking into consideration the question of industrial hygiene or extending it, is now "going on," "pending," "contemplated," "prospective," or "desired": Delaware, Georgia, Illinois, Louisiana, Minnesota, Michigan, North Carolina, Texas, Virginia, and West Virginia.

I should not close without a word as to what is actually being accomplished in certain outstanding and progressive states. The following is excerpted from the reply of John P. Meade, Director of the Division of Industrial Safety of the Department of Labor and Industries of the State of Massachusetts:

> There are 36 inspectors engaged in this work, two of whom are physicians, two engineers and the remainder factory inspectors chosen under the civil service system. This staff of inspectors examined, during the past

year, conditions in 39,000 mercantile and manufacturing establishments; more than 20,000 orders to correct conditions found in industry were complied with by the employers in this state as a result of this inspection, 989 accidents in the various industries of the commonwealth inspected and more than 100 occupational diseases looked into. During the year, 3,921 orders were issued in connection with the legal requirements for adequate ventilation and other features (which may properly be called industrial hygiene).

The new organization in the State of New York is but a few months old, but from the very nature of its published personnel we may look for greatly extended accomplishments very soon.

The question of policy of state government procedure in supervising industrial hygiene is commented upon by Secretary Royal Meeker of the Pennsylvania Department of Labor and Industry as follows:

> Long experience has convinced me that the best results can be obtained through educating the doctors in the (state) health service to a comprehension of the peculiar health hazards existing in industries rather than to build up a separate corps of doctors in the Department of Labor and Industry. I think a system similar to that which has been built up in the federal service will give the most satisfactory results. As you know, the federal public health service assigns physicians to work as medical officers under the direction of other departments for the purpose of dealing with medical and hygienic questions. The salaries of these medical officers are paid by the Public Health Service. This system gives sufficient control and supervision, while at the same time coordinating all medical inspections and services in the Bureau of Public Health. I think it is fundamental that industrial sanitation, hygiene, medicine and surgery should be recognized as a component part of public health not to be treated as if they were standing entirely separate and peculiar to industry. Industrial lead poisoning shows the same symptoms and has the same detrimental effects as lead poisoning acquired from drinking leaded water from a well in the back yard.

CONCLUSIONS

We may conclude from this preliminary study that: (1) Taking the states as a whole, very few are giving any attention in an official way to the subject of industrial hygiene and, outside of "sanitation," * to the health of the worker or to the prevention of occupational diseases. (2) Standards are practically lacking in regard to healthful working conditions in statutes and occur only in half-a-dozen state departmental regulations. Whether many of these standards would bear the light of present day knowledge upon the subjects covered, was not a part of this study, but it is my personal opinion after examining a number of them that some are excellent, some questionable, some wrong and some mere verbiage. (3) Enforcement is almost a dead letter in many of the states which report some organization, laws or regulations covering industrial hygiene, principally because of shortage of personnel or lack of understanding of the subject. (4) The personnel provided, with the exception of a handful of states, is employed upon safety work and other matters; is quite unqualified to take on this branch of industrial inspection and supervisory service; freely admits it and prefers to side-step it. (5) Serious consideration should be given to the placement of the subject of industrial hygiene. Should its supervision be in labor departments or health departments? In which department should the end-results, *i.e.*, occupational diseases, be considered? Does it make any difference, provided trained personnel is on the job?

* "Sanitation" is used to cover such ordinary matters as drinking water supply, toilet rooms, washing facilities and usual workroom cleanliness. Also locker rooms and rest rooms where provided.

ABSTRACT OF DISCUSSION

DR. F. L. HOFFMAN

In spite of Dr. Hayhurst's pessimism, there has been great advancement in the past 30 or 40 years. We can now get information from state departments which was unobtainable 20 years ago. Our present investigation in the printing and publishing trades also shows that you can get anything done if you aim at fact-finding and not information-gathering. You can get complete coöperation from employers and labor organizations. We have used the

questionnaire method, among others, with very good results. Labor men do not care for ultra-fine scientific investigations. They will support practical scientific investigations. Very little money also is necessary to find out facts if your object is clearly stated and the work is impartially done. It is necessary to emphasize personal hygiene always. I believe also that state labor departments are due for a good stirring up. Occupational diseases, as such, are of minor significance but the general question of the health of workers is the important question. Lead poisoning and tuberculosis are disappearing diseases due to better wages, shorter hours, the prohibition enactment, better sanitary conditions, etc. Proper organization must be had to handle the entire question. . . .

We find that workers themselves are indifferent. This was the case in connection with the silicosis investigation among the granite workers of Barre, Vt., whose mortality rates from silicosis and tuberculosis we found to be excessive. A bill for compensating silicosis was presented at the last session of the New York Legislature but was defective. It will be re-introduced this year. It is necessary to keep up the agitation. First, facts must be gotten; second, knowledge must be spread to those who should have these facts, and, third, legislation must be demanded. This Section of the American Public Health Association enjoys the position of impartiality and is a logical place to keep up the agitation. It should ask for financial support and I think it entirely possible that it could be easily secured.

TYPHOID FEVER EPIDEMIC AT SOLDIER SUMMIT, UTAH

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REPORTS of typhoid fever epidemics have been so numerous that one might be disposed to think there was nothing new to be added to their history. However, the epidemic is rare which has not some features which are more or less distinctive. The main justification for reporting the epidemic in Soldier Summit was its unusual tendency to mislead investigators regarding the real cause. It is another example of how little credence can be put in hearsay evidence; how open-mindedly an investigation much be approached, and to what extent conclusions must be based on the actual findings.

Soldier Summit is a town of about 1,200 people, almost two-thirds of whom are in the employ of the Denver, Rio Grande and Western Railway. The water supply comes from the right fork of the White River. Toward the end of May, 1924, the railway authorities, at the instigation of the State Board of Health, had a chlorinating apparatus installed by a reliable company to chlorinate the water supply for the homes of their employes. This brought treated water to about two-thirds of the population, while the other third (who were not railway employes) used unchlorinated water from the same source.

About July 9, the State Board of Health was notified of a mysterious epidemic in Soldier Summit. About thirty persons were ill, some of them seriously so and supposedly from food poisoning. The epidemiologist of the State Board of Health visited the town on July 10 and found that the regular company physician (the only one in town) had gone on a vacation, and the one who had come to supply for him was ill and unable to render any service. On investigation, it was found that there were at least twelve homes in which there was illness, with twenty-nine persons affected. Some of them had been attended by physicians from neighboring towns. They were

treated for food poisoning, as it was generally believed that the illness was caused by meat which had been specially prepared and brought into the town for the requirements of the Fourth of July festivities.

Practically all the cases seen showed a high fever, headache and thirst; some had diarrhea, cramps, vomiting, hiccups and backache; and some had no diarrhea until a purge was taken. No rose spots were visible on any of the patients, and no record was available to indicate what the temperatures of the patients had been. The only thing which at first seemed common to all patients was that they had eaten of the suspected meat.

The first case in the town was that of a man who claimed that the first signs of illness appeared about three or four hours after having eaten some of this meat on July 2. The other members of his family, five in all, had partaken of the same meat, and all were ill, but no ill effects had been noticed till from one day to a week after the first case had appeared. Other families in the vicinity gave similar histories, but some gave more conclusive evidence against the meat. For instance, of four members of one family, three had eaten the meat and were ill, while the other one who had not eaten of it was perfectly well; another family reported that of the seven members, four had eaten the meat and were ill, and the other three were well. Still more conclusive seemed the tale of a family who took some of the meat with them when going on a visit to a town 45 miles distant, where not only they, but the family visited were made seriously ill after partaking.

Notwithstanding all this evidence, the epidemiologist when visiting the second family thus affected, expressed himself as suspecting typhoid fever, and arranged to have the patients moved to a hospital about 50 miles away so that they might be properly cared for and Widal agglutination tests made. In the meantime other cases were investigated. An investigation of the supply of milk, ice, ice cream and vegetables proved that these could hardly be responsible for trouble. Suspicion was diverted from the water supply due to the recent installation of a chlorination system and the fact that a slight majority of the homes where illness had occurred were supplied with chlorinated water.

Instructions were given to the mayor regarding precautionary measures, and he was informed that all cases of this sort were to be treated as typhoid cases until evidence to the contrary was established. Arrangements were made to obtain the services of a nurse to give assistance to individual cases and see that instructions were carried out to control spread of the disease.

A sample of the suspected meat was obtained and submitted to the State Laboratory for culture and examination. Samples of water, both chlorinated and unchlorinated, were obtained and blood samples were taken from all cases for agglutination tests.

On July 11, a report from the hospital where the family was taken on July 10 stated that the Widal was positive and the patients had typhoid fever. Other cases later showed positive Widals. The sample of meat proved negative for bacillus typhosus, paratyphosus and enteritidis.

A very confusing incident in connection with this epidemic was the illness of four sheepherders from another county who had stopped in Soldier Summit on July 1 while taking sheep up to the range. They ate of the suspected meat and all were ill, three between July 2 and 4, and the other one about eight days later. They all blamed the meat, but upon diagnosis they were found to have typhoid fever, which apparently had been contracted prior to their stop in Soldier Summit. They could not have been the means of carrying typhoid into Soldier Summit as they had not been there prior to the night of June 30, whereas Soldier Summit people first showed symptoms July 2, too short an interval for the herders to be the source for the townspeople.

As milk, ice, ice cream and vegetables were eliminated as sources of infection, there remained only the water, which upon examination was found to be highly polluted. After a rainfall the water supply was markedly turbid, and yet no excess of chlorine was added to compensate for the turbidity. Only 1.75 pounds of chlorine per 1,000,000 gallons of water had been added up to July 6, when it was increased to 2.2 pounds. On July 21, the amount was again increased to 3.2 pounds, from 8:30 A.M. to 9:30 P.M., but by then the damage had been done.

The fishing season opened June 15, and many fishermen came from far and near to fish almost immediately above the intake pipe of the city water supply. Weather records in the chief dispatcher's office at Soldier Summit showed that on June 19 there had been a heavy snowfall of five or six inches, almost immediately followed by warmer weather. This undoubtedly resulted in the washing of polluted organic matter into the water supply, and so with this and the marked turbidity the small amount of chlorine was insufficient to disinfect the supply for the employes of the railroad, while the rest of the citizens had not even the insufficient protection of the chlorination plant.

Nothing pathogenic could be recovered from the samples of suspected meat submitted to the laboratory; nor were there any cases of typhoid reported from other places where portions of the same batch of meat had been sold. No typhoid or paratyphoid carriers were found among the meat handlers. It is possible that something in the meat might have caused a temporary alimentary disturbance, or even accelerated or aggravated the typhoid infection already present in some cases, but it is likely that the eating of the meat was a mere coincidence and had very little or nothing to do with the "mysterious epidemic" which was none other than our old enemy that has often deceived—typhoid fever.

Although no precautions were taken to prevent the spread of the disease prior to July 10, only two or three cases developed subsequent to that date, and every case, with one exception, made a satisfactory recovery.

It may be added, that it was later discovered that some members of the family 45 miles away from Soldier Summit had visited that town prior to the visit by their friends, when the suspected meat was eaten, and that the date of their visit coincided with the date of possible pollution of the town's water supply.

Venereal Disease Reporting in Massachusetts—The Massachusetts Department of Public Health is contemplating new regulations whereby venereal diseases will no longer be reported directly to this department, but through the local boards of health, a practice adhered to in most states and found highly satisfactory. This has been made possible by a recent act of the Massachusetts Legislature giving the State Department of Public Health authority to make special rules and regulations for reporting venereal disease cases. The already existing health laws did not specifically delegate such authority to the Department of Public Health; so this act removes any legal doubt as to the right of the health authorities to provide special regulations for the control of syphilis and gonorrhea. The aim of such regulations in Massachusetts and other states, says the U. S. Public Health Service, is to prevent the spread of venereal diseases in the community.—*Health News*, U. S. P. H. S.

HUMIDITY CONTROL IN RESIDENCES

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IN A LARGE portion of this country the severity of the winter makes central heating units an economic necessity. The average householder must give some attention to temperature control in his residence, but he pays little heed to the control of moisture in the air. He may be aware that cold, moderately dry, outdoor air means excessively dry air within the house; of this latter condition he may complain, but he usually does nothing to correct it.

This paper draws attention to the difficulties encountered in humidity control in the average residence, and suggests methods by which unduly dry air conditions can be remedied.

HUMIDITY MEASUREMENTS

Very few householders are sufficiently interested in humidification to take temperatures by wet and dry bulb thermometers and read the per cent relative humidity of the air from a psychrometric chart. A more direct method of measuring humidity is by using the hair hygrometer—an instrument which indicates changes in relative humidity by the expansion or contraction of a human hair. While the sensitivity of the hairs is extreme and the response to changes very rapid, their accuracy should be checked occasionally against wet and dry bulb thermometers. But even if a hair hygrometer is not set correctly, it may still be sensitive enough to slight changes in humidity for the requirements of the householder.

Human sensitivity to slight temperature changes is surprisingly keen. If the dry bulb temperature is kept constant, both trained and untrained observers can readily detect changes in wet bulb temperature of 1° to 1½° F., which correspond to a very small change in per cent relative humidity. This is particularly true at dry bulb temperatures within the range which most people prefer for sedentary occupations.

RELATION OF HUMIDITY TO HEALTH AND COMFORT

It has been shown by Yagloglou and Miller[1] that a scale in which temperature, humidity, and air motion are evaluated in their proper proportions is the most suitable for judging the cooling or warming power of the air. This they have named the *effective temperature* scale. From their more recent data, they have drawn a simple chart from which the effects of varying temperature, humidity, or air motion can be read almost at a glance.

The effective temperature scale is based primarily on the subject's sense of heat, cold, moisture, and dryness, and is not founded on physiologically measurable data. However, as soon as conditions outside the comfort zone maintain, whether they are too hot or too cold, it has been found by McConnell, Yagloglou, and Fulton[2] that an increase in basal metabolism results. They and their associates also found that changes in pulse rate, body temperature, systolic and diastolic blood pressure, and loss in body weight all follow the effective temperature scale, rather than either dry or wet bulb temperature.

Yet it should be clearly understood that neither Yagloglou's charts nor his data prove that the warm, dry condition is

either better or worse for our health than the cooler, more moist condition. They show simply that different dry bulb temperatures may feel alike in comfort, providing that the per cent relative humidity and air motion is adjusted accordingly.

The work of the New York State Commission on Ventilation[3] further confirms Yagloglou's charts, particularly as to the comfort zone, but their data fail to show that schoolroom air mechanically humidified is more healthful for school children than dry air heated to the proper temperature but not humidified.

Huntington's book, "Civilization and Climate," especially the new edition,[4] gives statistical data in strong support of the humidification of residences during the months of central heating. Huntington believes that the best climates are those in which there are frequent changes, and that uniformity is neither stimulating nor beneficial. He finds that arid climates, whether hot or cold, are not the optimum for a productive type of civilization. He also suggests from his data that people living in either stimulating or debilitating climates are benefited by constant contrasts. Theoretically, it should make no difference whether these contrasts are supplied by nature or by mechanical devices. If the cold outdoor climate is more bracing than the warmer conditions indoors, according to Huntington's data, we should give ourselves the beneficial contrast between the cold, bracing winter temperature outdoors, and indoors approach summer, spring, or fall conditions by humidifying our homes. In this, an essentially statistical treatment of the subject, lies a strong argument in favor of humidification during the months of central heating.

In commenting on the failure of the New York State Ventilation Commission to find beneficial results from humidifying schoolrooms, Huntington points out that the Commission, of necessity, limited its investigations to periods measured in weeks or months. His data, on the other hand, embrace years and even centuries.

When one considers our extreme adaptability to changes in temperature, humidity, and air motion, the difficulty of supplying clear-cut proofs of optimum conditions by short period experiments is not surprising. None the less, there seems to exist at present a very general opinion, supported by some experimental data, that hot, dry air is less pleasant than air humidified to a moderate degree, and that it predisposes us to colds and other respiratory disorders.[5, 6, 7] When to this opinion we add Huntington's data, the evidence weighs definitely on the side of humidity control.

In general, relative humidities of 40 to 60 per cent will be found most conducive to comfort.

HUMIDITY AND DUSTINESS

Many respiratory complaints, like hay fever, are known to be caused by the inhalation of small particles given off from flowers, plants, animals, and various organic dusts. By humidification, objects within dwellings are brought to their normal humidity content, and dust liberation is inevitably reduced.

A momentary increase in per cent relative humidity within a room is not an insurance against dustiness; in fact, it tends to make conditions worse rather than better, because humidified air usually maintains dust in suspension more readily than does dry air. In other words, to reduce dustiness, the dust itself and the objects on which it lodges must be brought to a reasonable per cent relative humidity and maintained in that condition by humidifying the air.

DIFFICULTIES IN HUMIDIFYING RESIDENCES

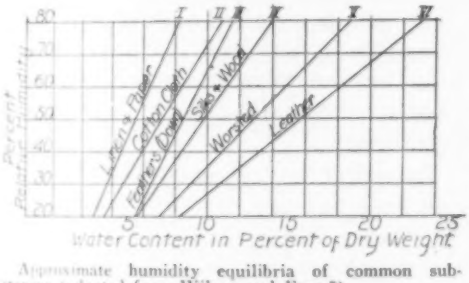
If the rooms of dwellings were airtight and no water absorption by the contents of the room took place, it would be a simple matter to maintain any per cent relative humidity below that at which condensation on cold objects occurred. The graphic relation between per cent relative humidity and amount of water to be evaporated at any dry bulb temperature could be given by a straight line.

In a 3,000 cubic foot room at 70° F., the evaporation of approximately 14 ounces of water would theoretically give 25 per cent relative humidity; 28 ounces would give 50 per cent relative humidity; and no further evaporation would be necessary to maintain either condition. Dwellings are not, however, air-tight, and their contents absorb large quantities of water from the air; therefore, humidity requirements should not be calculated solely on the basis of the cubic contents of the dwelling.

MOISTURE ABSORBED BY HOUSEHOLD FURNISHINGS

In Figure 1 are given approximate humidity equilibria curves, adapted from the data of Wilson and Fuwa.[8] For our purposes, it is sufficient to include only the regions of 20 to 80 per cent relative humidity and to draw their curves as straight lines, although the originals are skewed in the regions 0 to 20 per cent, and 80 to 100 per cent relative humidity.

FIGURE I



Approximate humidity equilibria of common substances (adapted from Wilson and Fuwa[8]).

In increasing the humidity of a dwelling from 20 to 40 per cent, it is evident that 500 pounds of furnishings, represented by the curve for silks and woodwork (curve 4), would absorb approximately $500 \times (.084 - .056) = 14$ pounds of water before equilibrium would be reached. Obviously, household furnishings, to say nothing of plants, take up water in large amounts, and, if deprived of this moisture, many of them are damaged.

This is taken into account in museums, art galleries, greenhouses, and, above all, it is recognized by an ever increasing list of manufacturing industries, where humidity control is even more important than the control of temperature. In all such cases, it is necessary to make very substantial allowances for moisture absorption by the contents of the room until humidity equilibrium with the room air is reached. Otherwise, in the competition for moisture it is a certainty that the furnishings will take practically all the moisture intended for the air.

FIGURE II

Air-o-mist Humidifier * working on centrifugal atomizer principle.

LEAKAGE OR INFILTRATION

Recent work by Houghten and Schrader[9] and by Jones, Berger, and Holbrook[10] with carbon monoxide, and earlier experiments by Haldane[11] with illuminating gas, have shown the difficulty of maintaining abnormally high gas concentrations within dwellings, because of leakage and diffusion with the outdoor air. A substantial difference in temperature between the indoor and outdoor air is, in itself, sufficient to promote leakage. If, in addition, a breeze of 15 to 25 miles an hour is blowing outdoors, and the walls and windows are exposed to it, the air in the room may undergo several changes an hour. During the cold months, in normal dwellings this rate of leakage varies from about 1 to 3 changes an hour, depending on the use of open fires and the velocity of the outdoor air.

* Made by Standard Engineering Works, Pawtucket, R. I.

Chimney drafts are caused by the difference in density between the chimney gases and outdoor air. If a brisk wind is blowing across the top of the chimney, it often tends to exert a suction effect, and thus increases the chimney draft. In cold weather, an average household chimney for an open fireplace will produce an air change of about ½ to 1 an hour in a 3,000 cubic foot room. If a wood fire is lighted, this draft will be much increased, and the air changes raised to approximately 2 to 4 an hour.[12]

CONDENSATION OF WATER ON COLD OBJECTS

No matter how the per cent relative humidity in any room is obtained, if the resulting atmosphere has a dew point temperature (condensation temperature) above that of any object in the room, moisture will condense upon that object and it will drip.

With double windows and an indoor temperature of 69° F., Kratz[13] finds that a relative humidity of 60 per cent may be maintained with an outdoor temperature as low as 20° F. and dripping avoided. With single windows, dripping begins at about 30 per cent relative humidity indoors and an outdoor temperature of 20° F.

FUEL CONSUMPTION

Because humidification permits the use of somewhat lower dry bulb temperatures than would be found comfortable in normal air of lower humidity, it must not be inferred that fuel economy results.

Let us consider an example, using the effective temperature scale. If the outdoor air is 20° F. and the relative humidity 60 per cent, for comfortable indoor conditions the cold air must be warmed to about 74° F.* unless moisture is added. This requires 13 B.t.u. per pound of air. The other alternative is to warm the air to 69½° F. and increase the relative humidity to 50 per cent, for which a total of 18.5 B.t.u. is required—an increase of 37 per cent. The difference is due to the large amount of heat required to evaporate water (the latent heat of evaporation) as compared with the heat needed to warm the air when no moisture has been added.

In this example, we have ignored air leakage and moisture absorption by the contents of the residence, both of which would increase the amount of heat required for humidification. On the other hand, an outdoor temperature of 20° F. is probably low for mean outdoor conditions. The accuracy of this estimate, viz., 37 per cent, will depend, then, very largely on local conditions.

METHODS OF HUMIDIFICATION

Among the handicaps with which we are confronted in considering methods for humidifying residences are:

(a) Noisy mechanical devices, regardless of their efficiency, will not be tolerated.

(b) Complicated or expensive devices will not be considered.

(c) The air leakage amounts to from ½ to 3 changes an hour.

(d) If the contents of the room, and the walls, floors, and ceilings become dried out and humidification is then attempted, they will absorb moisture in large amounts.

The writer has met enthusiasts to whom objections (a) and (b) do not apply, and others who either did not believe or chose to disregard objections (c) and (d).

In industrial installations where humidification is of prime necessity, items (a) and (b) carry little weight, and ample allowance is always made for (c) and (d).

In residences, all four items are important. This, unfortunately, reduces the possibilities to very narrow limits.

SPRAYS AND CENTRIFUGAL ATOMIZERS

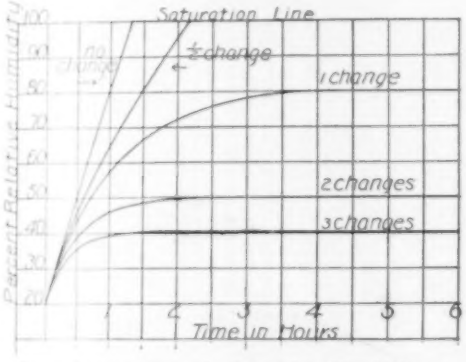
Both of these devices send atomized water into the air at constant rates, one by spraying and the other by breaking up water into a fine mist—ideal methods for promoting evaporation. Either device

* The resulting relative humidity will be about 9 per cent.

can be turned on and off by thermostats, set for any desired wet bulb temperature. When running, they send out mist at a constant rate, regardless of humidity conditions in the room.

Figure II illustrates a small adaptation of the centrifugal humidifier principle and is designed especially for use in residences. Figure III shows the performance of this machine in a 3,000 cubic foot room subjected to various rates of leakage. From the curves, it appears that saturation of the air in a room of this size can be produced quickly by this machine. Actually, this is prevented by leakage and the hygroscopicity (moisture absorbing tendency) of the contents of the room.

FIGURE III



Evaporation curves of Air-o-mist Humidifier in 3,000 cubic foot room with various air changes and constant temperature of 70° F. These curves were plotted from the equation: $W=\frac{E}{C}(1-e^{-Ct})$

Where W = ounces of water evaporated
E = rate of evaporation per hour
C = air changes per hour
t = time in hours
e = the base of the natural or hyperbolic logarithms.

In residences, either sprays or centrifugal atomizers could be utilized. Neither device is noiseless, but both are well adapted to automatic control. Their objectionable feature as a class is that moisture is emitted in the liquid and not the gaseous or vapor state, and dripping may occur.

STEAM VALVES

In steam-heated houses or apartments, humidification can be accomplished by attaching a small valve to the steam pipe or radiator and letting steam blow off into the room. Steam coming directly from the pipes may introduce objectionable odors or cause dripping, but these difficulties can be overcome by the use of simple, standard pipe fittings which any plumbing house can supply. The objection of the sizzling sound from the escaping steam cannot, however, be avoided.

EVAPORATION OF MOISTURE IN WARM AIR FURNACES

In the air jackets of warm air furnaces are troughs which are intended to be filled with water. This water will be evaporated at a rate governed by the temperature of the air and its moisture content, and the net results will be measurable in gallons or pounds per hour. For every 10,000 cubic feet and 1½ air changes an hour, Kratz[13] calculates that the evaporation of 0.6 gallon of water each hour from a warm air furnace will keep the per cent relative humidity at 40, with an outdoor temperature of about 17° F. and 69° F. within the residence. In our 3,000 cubic foot room, this amounts to 24 oz. (about 1.5 pints) of water an hour. In the writer's experience, this is far too low an estimate, because it takes no account of the initial hygroscopicity of the contents of the room. Nevertheless, Kratz[14] found in actual tests that humidifications of this order made conditions distinctly more comfortable, although the per cent relative humidity was raised but little—a matter of a few per cent, instead of the substantial increase expected from the justifiable assumption of 1½ air changes an hour.

PANS OF WATER ON RADIATORS

In residences heated by steam or hot water, metal pans on the radiators can be used to humidify the air in the same way as the water troughs in warm air furnaces. At best, however, the amount of water evaporated from radiator pans is very slight, but it can be increased by hanging towels from the pans down over the radiators and by blowing air upon them from a small electric fan.

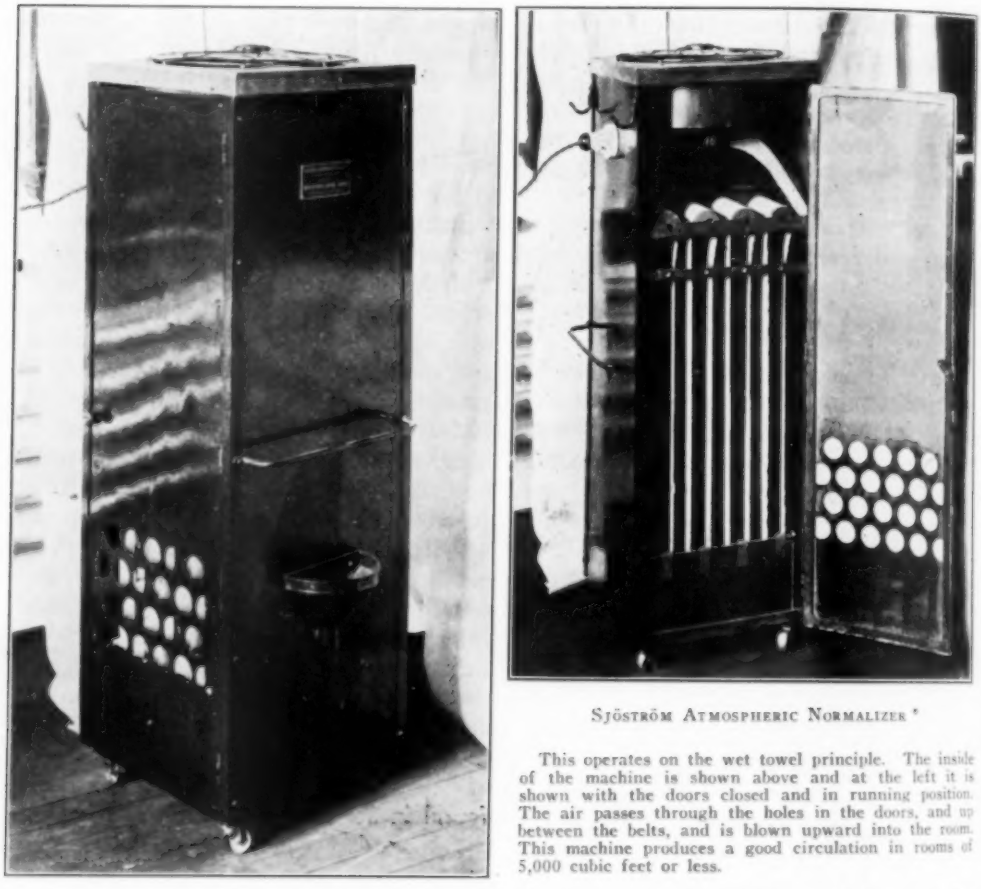
SJOSTROM'S NORMALIZER

An efficient mechanical device embodying the wet towel principle is shown both open and closed in Figure IV. Instead of towels, cloth belts are used and drawn continually through a trough of water by the motor which drives the fan at the top of the normalizer. The evaporative performance of this device is illustrated by the curves in Figure V, which show that moisture is evaporated at a rate governed by the temperature and relative humidity in the room, and therefore no thermostatic control is necessary.

The 70° F. curve was determined experimentally by finding the actual evaporation rate at various humidities. Since this rate is a function of the vapor pressure at wet bulb temperatures, the other curves could be calculated by referring to the 70° curve. After the curves were drawn, points were chosen at random and checked experimentally, giving results sufficiently accurate for the purposes intended.

The curves in Figure VI give the humidity control effected by this machine in a 3,000 cubic foot room heated to 70° F. They show that, theoretically, with no air leakage, saturation is approached asymptotically with infinite time. Practically, therefore, the automatic decrease of evaporative power with increase in per cent relative humidity, prevents the saturation of the air. Moreover, evaporation takes place by a film effect and no spraying or dripping results.

FIGURE IV



SJÖSTRÖM ATMOSPHERIC NORMALIZER *

This operates on the wet towel principle. The inside of the machine is shown above and at the left it is shown with the doors closed and in running position. The air passes through the holes in the doors, and up between the belts, and is blown upward into the room. This machine produces a good circulation in rooms of 5,000 cubic feet or less.

* Made by Manufacturers Machine Co., North Andover, Mass.

SUMMARY

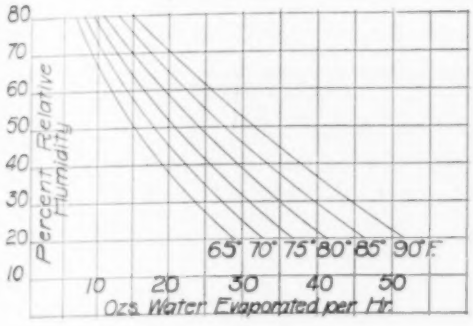
During the months of central heating, increasing the humidity of the air permits the maintenance of lower temperatures, decreases dustiness, prevents the deterioration of plants and furnishings, and improves the atmosphere from the standpoint of health and comfort.

The chief drawbacks in humidity control are (a) loss of moisture, initially through absorption by the contents of the residence, and constantly through air leakage, (b) condensation of moisture on cold objects, such as windows, and (c) increase in fuel consumption.

Mechanical humidifiers, such as sprays and centrifugal atomizers, are discussed, as well as devices in which moisture is evaporated from pans on radiators, from troughs of warm air furnaces, and from the surface of wet towels or wicks. A mechanical humidifier functioning by the last method is described and illustrated.

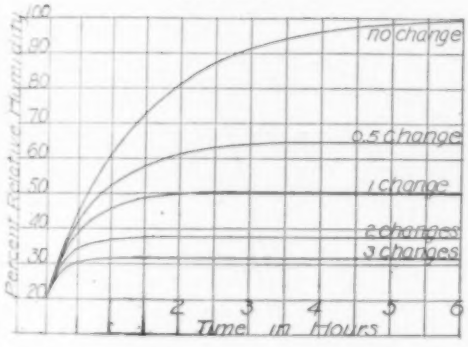
Typical performance curves are given, showing the evaporative power of these devices in different humidities, and the control they effect.

FIGURE V



Evaporation curves of Sjöström's Normalizer showing changes in evaporative capacity with variations in per cent relative humidity. 70° F. curve was determined experimentally, others by calculation and subsequently checked by experiment.

FIGURE VI



Evaporation curves of Sjöström's Normalizer in 3,000 cubic foot room with various air changes and constant temperature of 70° F.

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SUCCESSFUL HOOKWORM CONTROL WITH CHENOPODIUM–CARBON TETRACHLORIDE*

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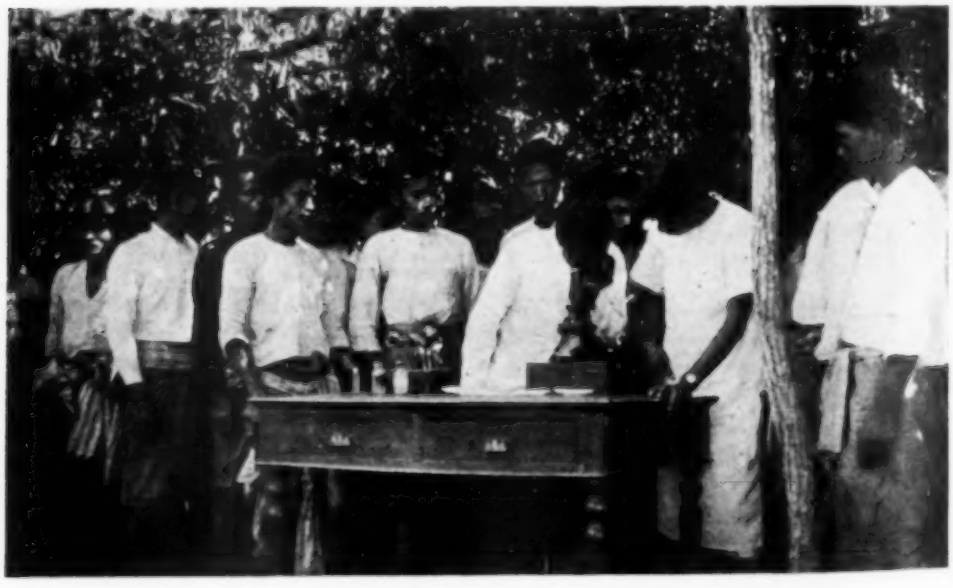
IT IS NOW four years since Hall[1] called attention to the value of carbon tetrachloride as an anthelmintic. The suggestion was at once caught up, and a succession of investigators have worked out the properties of this drug, both in the laboratory, with the help of dogs and other animals, and in the hospital, where a small number of patients under control could be treated and observed. Egg counts, worm counts, symptoms, and autopsies have all contributed their information, until today we have a mass of information about carbon tetrachloride, its dosage, efficiency, and toxicity.

This information is of value to two classes of men, the private practitioner and the public health official. The private practitioner or hospital physician treats but one or two people at a time, individuals whom he has completely under his observation and control. The qualities he especially desires in an anthelmintic are comfort and efficiency. The public health official has another problem. He must control infection in a whole population, by the treatment of large numbers of people. To do this he must frequently use non-medical men as dispensers, for an adequate supply of doctors is not available or is too expensive. For him the successful anthelmintic must have not only the two qualities mentioned above,



Examining Hookworm Larvae

* The observations which form the basis of this paper were conducted with the support and under the auspices of the International Health Board of the Rockefeller Foundation.

but also those of economy, and, above all, of safety. In addition, it must deal adequately with the mixed infection which is usually present. Today he is studying the claims of carbon tetrachloride in the reports of the laboratory and hospital workers, and he asks the final question: "How does it work in the field, in mass treatments?" The first answer to this was furnished by Lambert [2] in his report of 50,000 treatments in Fiji, with three deaths. This paper reports further experience in another tropical field, on a still more extended scale.

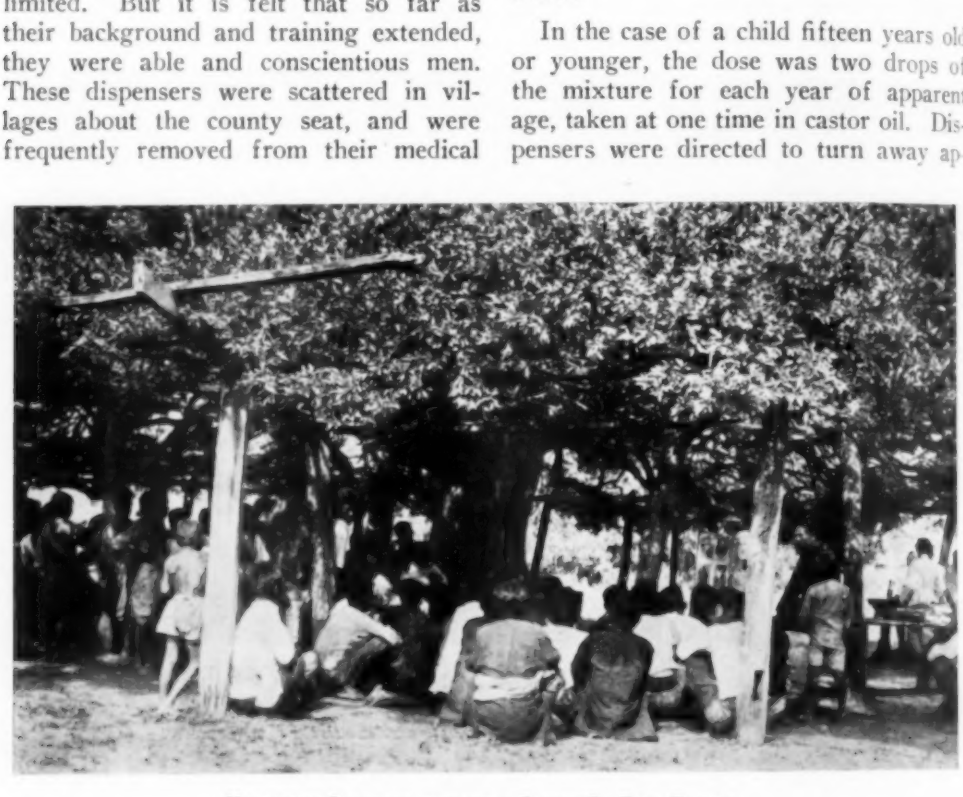
SCHOOLBOYS TAKING HOOKWORM MEDICINE

THE HOOKWORM CAMPAIGN IN SIAM

For some years past the International Health Board has coöperated with governmental and other agencies in Siam in carrying on a campaign for the control of hookworm and other intestinal parasites, on the plan of mass therapy (sanitary improvement, of course, forming a phase of the work). Areas were selected because of their high infection rate, and treatments were given without individual examination to every able-bodied person who could be induced to present himself. Various drugs were used; but since May, 1923, by far the greatest number of treatments have been given with a mixture of chenopodium (40 per cent) and carbon tetrachloride (60 per cent). This mixture combined the enfficiency of carbon tetrachloride in dealing with hookworms and the virtues of chenopodium in removing other parasites present. The dilution with carbon tetrachloride served to lessen the discomfort of taking. The mixture was also considerably cheaper than chenopodium alone.

Every precaution was taken to guard the purity of the drugs. "Chemically pure" carbon tetrachloride was purchased in New York, but before being used was retested in the Government Laboratory in Bangkok, and when necessary redistilled and repurified. The chenopodium used was the standard article of good quality available in New York. The mixture was prepared by the field men by adding the measured volumes in quantities sufficient for several days' treatments. Just what deterioration takes place in the mixture on standing we do not know as yet, but instructions were issued to mix enough for only 3 to 4 days at a time.

Each field unit was composed of one Siamese physician and five or six dispensers. The latter were men of limited education, few of them having completed grade school; their training was also limited. But it is felt that so far as their background and training extended, they were able and conscientious men. These dispensers were scattered in villages about the county seat, and were frequently removed from their medical officer by several hours travel. They were thus thrown much on their own responsibility, both in conducting treatments and in dealing with any complications that arose.



HOOKWORM LECTURES BENEATH A SACRED BO TREE TEMPLE

PROCEDURE

The maximum dosage used was 2.0 c.c. of the mixture. This was less than has been employed in some other countries, but the Siamese are a small people, and in an extended campaign a conservative dose seemed the wisest. The following routine was observed in giving treatments:

1. The patient appeared without breakfast.
2. At 7:00 A.M. he was given half the dose of the mixture.
3. At 8:00 he took the remainder.
4. At 9:00 he drank an ounce of magnesium sulphate in hot water.
5. He was then dismissed with the warning not to take food until after his bowels had moved.

In the case of a child fifteen years old or younger, the dose was two drops of the mixture for each year of apparent age, taken at one time in castor oil. Dispensers were directed to turn away applicants with tuberculosis, heart or kidney disease (giving them simple instructions in the more evident signs), those with acute conditions, and pregnant women.

RESULTS OF THIS SERIES OF TREATMENTS

The active use of this mixture of chenopodium and carbon tetrachloride in Siam began in May, 1923. Between that date and September 1, 1924, more than 225,000 individuals were treated with the mixture. This number is exclusive of cases in which for some reason other drugs were employed. It constitutes what is believed to be the largest series yet reported in which carbon tetrachloride was used.

In such a campaign a fatality is a thing most to be feared, not only in itself, but also in its effect on public sentiment. In connection with all these treatments with this drug, only three deaths were reported which on investigation were found to have any connection with the campaign treatment. Three others occurred, but of these one was a fractured skull in an old man who fell off a porch after treatment, one was a case of miliary tuberculosis (confirmed by post-mortem and examination of sections of liver), and the third was a case of overdose, a curious boy snatching a bottle and swallowing a mouthful of the mixture.

At the same time that this work was being carried on, Smillie and Pessoa[3] were finding that a dose of 2.0 c.c. of carbon tetrachloride (80 per cent), and of ascaridol, the purified constituent of oil of chenopodium (20 per cent), is "highly efficient, comparatively nontoxic, easy to administer, and inexpensive." The work in Siam, in which a similar mixture was used under remote campaign conditions, furnishes the field test. That we can report but three deaths in treating so large a number with this mixture should be a satisfactory and reassuring answer to the questions of public health workers elsewhere.

SUMMARY

1. A standard dose (2.0 c.c. maximum) of carbon tetrachloride (60 per cent) and oil of chenopodium (40 per cent) was used in a mass therapy campaign in Siam.

2. A total of 225,000 individuals were treated with this up to September 1, 1924, with three deaths.

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BACTERIOLOGICAL DATA ON THE CHLORINE TREATMENT OF RESPIRATORY DISEASES*

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THIS PAPER is a summary of the results of bacteriological studies of the recently proposed chlorine treatment for respiratory diseases. It is part of a combined clinical and laboratory investigation which has been carried on by a Board of Officers for nearly a year at the Army Medical School and Walter Reed Hospital, of the recently organized Army Medical Center.

This work has consisted of two parts: First, that done in a chamber with the early portable apparatus, which was carried out by Nichols and Hitchens; second, the work with the individual apparatus which has been done by Nichols and Simmons. The results with both methods are essentially the same, however, and in brief, according to our experience, do not furnish any bactericidal basis for the use of these methods.

The rationale of the chlorine treatment was at first said to be the bactericidal action of the gas and it was claimed that the flora of the nose and throat was remarkably reduced by one hour's treat-

* Read before the Twenty-sixth Annual Meeting of the Society of American Bacteriologists, Washington, D. C., December 30, 1924.

ment. In order to obtain information on this point we have made sets of cultures from the nose and throat on blood agar plates before and after treatment and compared the results. A small sterile swab was passed through each side of the nose to the nasopharynx and one-half of a blood agar plate was inoculated. A swab of the pharynx was then made and handled similarly. Then, an impression culture was made with a cork which had been inoculated from a certain part of the wall of the pharynx. This was a device of Major Hitchens in an attempt to secure more quantitative results. Similar cultures were made after one hour of treatment and in some cases at later intervals. The plates were then incubated and examined. In most of the earlier work the concentration of the gas was as great as could be borne without marked discomfort.

The amount of growth was noted by a four-plus system; in some instances actual colony counts were made. Of course, exact quantitative results are impossible on account of the varying conditions of the membranes and of unavoidable variations in the technique of swabbing. In a set of cultures taken an hour apart on the same normal individual, without treatment, there are marked variations and the second culture tends to be less rich. But by examining a number of individuals and by combining the results, it should be possible to detect any consistent and radical antiseptic action. This we have failed to find. In our first series we examined 34 patients by 129 sets of cultures and no change was noted in 50 per cent of the sets of cultures. There was an increase in 20 per cent and a decrease in 30 per cent. This leaves a clear decrease of 10 per cent which is within the limit of natural variation and certainly does not support the claims made. These results applied to all the usual organisms found in normal persons and in patients such as pneumococci, streptococci, influenza bacilli, micrococci, pneumobacilli, staphylococci and diphtheroids. There was no evidence of any sterilizing or selective action.

These results with others were reported to the Surgeon General's Office by the board on April 25, 1924, and partly as a result of this report, a new individual apparatus was devised by those interested, which is said to be more effective as the concentration of gas is more exact.

Our results with this apparatus are not essentially different from those with the chamber, as is seen in the following table:

TABLE I

	Chamber (34 patients)		Individual Apparatus (39 patients)	
	Sets of Cultures	Per Cent	Sets of Cultures	Per Cent
No change	69	50	54	57.4
Increase	25	20	13	13.8
Decrease	35	30	27	28.6
"Net decrease"	10	10	14	14.8

A summary of all observations is as follows:

Total number of patients	73
Total number of cultures	468

	Sets of Cultures	Per Cent
No change	123	55.1
Increase	38	17.0
Decrease	62	27.9
Net decrease	24	10.9

This so-called "net decrease" is too small to be of significance, especially when compared with the results of cultures made an hour apart without treatment—as seen in the following table:

TABLE II

	Normal Untreated		Normal Treated	
Total subjects	24		8	
Total cultures	146		46	
	Sets of Cultures	Per Cent	Sets of Cultures	Per Cent
No change	30	41	13	56.5
Increase	13	18	2	8.7
Decrease	30	41	8	34.8
Net decrease		23		26.1

Some allowance must be made in normal persons, at least, for decrease due to technique.

Of course, there is much to learn about the organisms or viruses of respiratory diseases and some may be more sensitive to chlorine than the ordinary organisms with which we have dealt. On the other hand, some viruses, as those of smallpox, are more resistant to antiseptics than the ordinary organisms.

Experiments with prodigiosus spray were also made. Prodigiosus was recovered from the nose and throat after an

hour's treatment in the same degree as in the controls untreated.

Thus, while we have not been able to demonstrate *in vivo* any bactericidal basis for this method, our results *in vitro* confirm in some respects the claims made. Pure cultures of respiratory organisms spread on blood agar plates and immediately exposed to the gas in a box are sterilized. The antiseptic effect decreases with length of time of growth before exposure, however, and if a culture has grown 24 hours before exposure, the effect is only occasionally noted. More significant is the fact that if swabs from the nose and throat are spread on the plates and exposed to the gas in a box, the antiseptic action is partly or entirely inhibited, depending on the amount of mucus present. A 50 per cent solution of saliva and chlorine water neutralizes 100 p.p.m. of chlorine and the resulting compounds have no antiseptic power.

This neutralizing power of organic matter, we believe, is the factor which explains our negative results. Chlorine is, of course, a powerful antiseptic. It does not destroy organisms in the ordinary air, but in the presence of moisture it becomes active, as in the sterilization of water and of wounds. In sterilizing water, the neutralizing effect of organic matter is so well known that a special check for free chlorine is made routinely and the dose is regulated accordingly. In the fluids of the respiratory passages no such check is possible. Again, in the treatment of wounds the neutralizing effect of serum and pus is well recognized and the treatment is given continuously and directly on the infected tissues in order to flush away the exudate and to bring fresh chlorine into action. In the proposed method, the application is comparatively brief and the infected areas are not reached with certainty.

The explanation of clinical results has recently been changed to detoxication, leucocytosis, etc. If there is any real merit in this method it must be due to other factors than disinfection. Our clinical results have not been radical or brilliant. They are about what would be expected from the bacteriological results.

Numerous modifications are being made with the apparatus used in this method, and, of course, it takes time to perfect any method, and there is no criticism on shifting positions. In our opinion, however, this method is basically defective. It belongs to a group of measures already investigated at the Army Medical School and discarded as ineffective, namely, (1) the sterilization of eating utensils as an important means of spread of these diseases, and (2) vaccination as a means of prevention. None of these measures can be selected as decisive in any future program of control of this important group of diseases.

It is hoped, however, that the experience with chlorine is not in vain. All the information gained as to suitable apparatus and dosage may come into full use, if and when some more selective gas is found for use by this respiratory method. While we admire the boldness of the conception and the technical ingenuity which characterize this work, we do not believe the goal has yet been reached.

SUMMARY

The chlorine treatment, in our hands, gives no evidence of even partial sterilization of the mucous membranes of the upper air passages. It does not kill B. prodigiosus sprayed on these membranes.

We are of the opinion that, in the doses used, the chlorine is neutralized and becomes inert, and that effective doses are too toxic.

FACTORS INFLUENCING THE BACTERIAL FLORA OF AN IMHOFF TANK*

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IN STUDYING certain groups of bacteria, which were classified in an arbitrary manner through some one chosen physiological activity, it was found that the groups of organisms occurred with varying frequency which was, however, fairly constant for a specific group.[1] The groups most important numerically were selected for further study in order to determine the fluctuations during the course of an extended period of time and to find out whether changes in temperature influenced the numerical changes. The study began in December, 1923, and was continued through October, 1924.

One Imhoff tank was chosen for study and samples were secured from the liquid layer seven feet below the level of the tank, which is ordinarily from 4 to 5 feet below the scum. In this layer of the tank the contents are more liquid than the upper or lower layers where either the scum or sludge occurs. Samples were taken twice a week, iced and brought to the laboratory. Here plate counts were made, and the samples tested to determine the bacterial ability to digest albumen, to produce hydrogen sulfide from protein, to produce nitrogen gas from nitrate, to produce nitrite from ammonium salts and nitrate salts from nitrite salts. These determinations were made by inoculating varying amounts of the sample into five specific media[2] and, after incubation at 20 to 24° C., observations were made to find the smallest amount of inoculum necessary to produce the desired reaction. The general results are shown in Table I.

The bacterial results for each date were tabulated according to the media used and the arithmetical average obtained. Index numbers were calculated for each result by dividing each item by the average for the group. This was done so that the proportional changes in the groups might be studied.

TABLE I

GENERAL RESULTS. LIQUID FROM TANK 3

	No. Tests	Total Counts	Averages
Agar plate counts ...	77	6,573,000,000	85,000,000
Albumen digesters ...	66	17,189,100	260,440
H_2S producers	74	7,841,200	105,960
N gas producers.....	61	410,300,000	6,726,230
Nitrite producers	38	378,100	9,950
Nitrate producers ...	38	68,500	1,800

Average air temperature (Jan., 1924–Jan., 1925).	54.6° F.
Average tank temperature, ten feet below surface	59.0° F.

These index numbers were tabulated and from them moving averages were calculated. The average bacterial count for one group on five successive dates was taken. Then the average from the second through the sixth date was computed and so to the end of the list. This was to diminish the value of sudden variations and to obtain a smoother curve showing the trend of bacterial values. Figure I shows the curves obtained by plotting these moving averages.

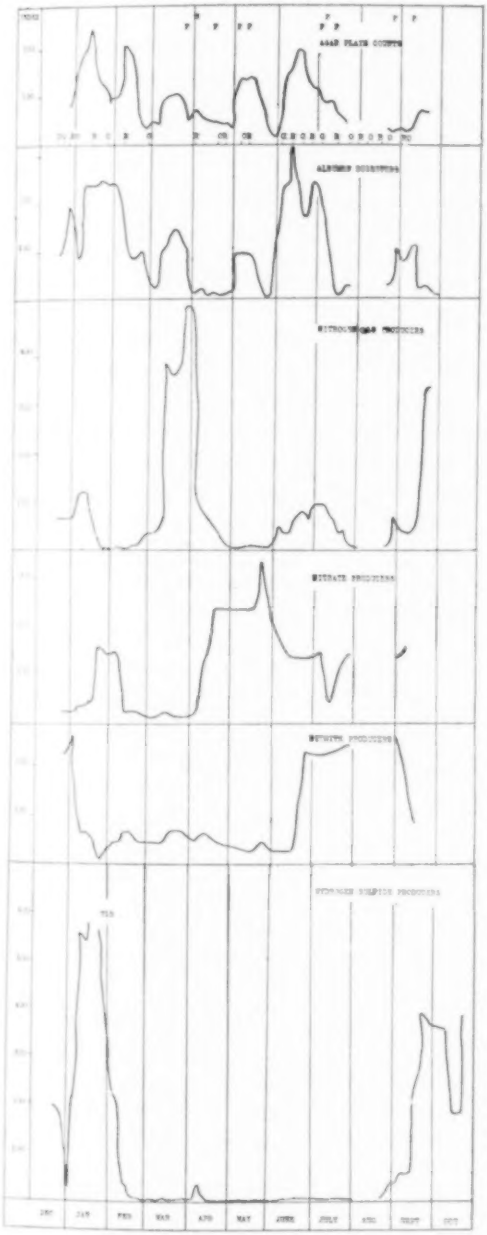
The curve for the agar plate count shows a certain rhythmic variation. The rhythmic quality occurs because the bacteria show an increase which usually rises to a peak once in every month. There is

* Studies on the Biology of Sewage Disposal. Paper 234 of the Journal series, New Jersey Agricultural Experiment Stations, Sewage Substation. Read before the Society of American Bacteriologists at the Twenty-sixth Annual Meeting at Washington, D. C., December 31, 1924.

one other curve which parallels this to some extent and that is the curve for the albumen digesting bacteria.

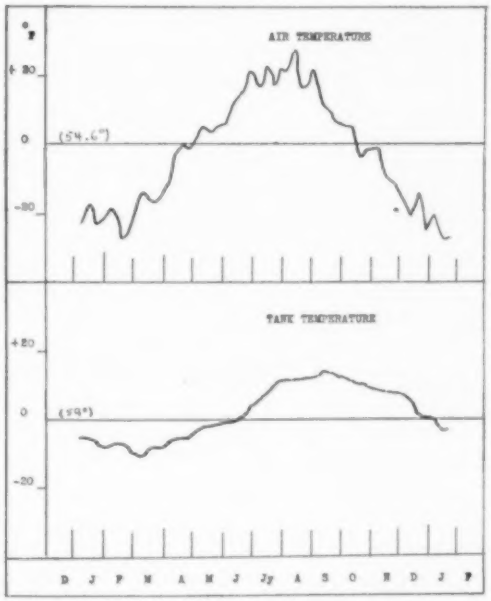
The curve for the nitrate reducing bacteria shows the largest increase in March and September, with lesser peaks in early January and July. The curve for nitrate producers shows peaks in late January and in May, at both of which times the nitrate reducers were below their average

FIGURE I



Proportionate variations in six groups of organisms as measured by moving averages of successive index numbers. O=tank operating, R=tank resting, S=sludge drawn, P=pumping, F=foaming.

FIGURE II



Temperature variations in the air and the tank from December, 1924, until January, 1925. The average temperature of each takes as zero and the variation in degrees Fahrenheit plotted as plus or minus.

numbers. The curve for the nitrite producers does not seem very significant but it can be seen that it does not coincide with the nitrate curve. The hydrogen sulfide producers were abundant in January and September and were present in small numbers during other months.

None of these curves suggest a relation with seasonal variations in temperature. (Figure II.) Other factors, then, must have modified the flora of the tank.

The Imhoff tank in question was one of a battery which has been in operation for a number of years. Foaming has always been a nuisance in the operation of this battery of tanks. This phenomena is accompanied by the rapid evolution of gas and, to some extent, the contents of the tank become mixed since it has been found that in a foaming tank a sample of the scum contains less than the average

number of bacteria while a sample from the liquid contains more than the average. To check the foaming, some of the contents may be pumped to a storage tank or the access of fresh sewage may be prevented and the tank "rested" to improve its ability to handle fresh solids.

These alternate resting and operating periods continue throughout the year as may be seen in Figure I. It must be borne in mind that the statistical methods used have given a curve which indicates the tendency for a given period while the "operating" and "resting" legends show an actual condition at a given date. It seems fair to say that the bacteria increase in the liquid of an operating tank and decrease during a resting period. The difficulty of determining the effect of operating and resting periods is further complicated because of sludge drawing and pumping. These two operations decrease the bacterial count.

What was the cause of the rise of the albumen digesters and the bacteria on the agar plates in June? This rise started with the operating period of the tank in early June and was unchecked by the resting period about a week later and finally culminated in the foaming of the tank about the first of July, which was presumably relieved by pumping material from the tank. At this same period there was no noticeable rise of the other groups of organisms. It is possible that we have here a temperature effect. The average temperature for the year in the tank was 59° F. or 15° C. The average temperature in the tank for April was 54.2° F. (12.2° C.), for May 57.4° F. (14.3° C.), for June 61.5° F. (16.4° C.), for July 69.0° F. (20.2° C.). Thus June, when the increase in organisms occurred, was the month when the temperature first rose above the average for the year. It would have been interesting to see the effect of the July temperature on the general bacterial count as indicated by the growth of agar colonies, but the pumping of material from the tank overbalanced the temperature factor.

A study of the growth curves for the different groups of bacteria suggests that there are various phases in the digestion of the material in the tanks in which a succession of bacteria takes a predominant part. It is seen that variations in the manner of operating the tanks influence the general bacterial flora and tend to obscure any seasonal variations which may occur.

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Tuberculosis Survey of Boston—Murray P. Horwood, Ph.D., Assistant Professor of Biology and Public Health at the Massachusetts Institute of Technology, has been asked to conduct a tuberculosis survey of Boston this summer for the Boston Tuberculosis Association. The survey will not only attempt to ascertain the facts concerning the anti-tuberculosis activities in Boston, but will evaluate them, and use them as a basis for a more comprehensive and effective program. The work is being performed with the coöperation of the state and local health departments, the hospitals, clinics, and the various social, welfare, and voluntary health agencies interested in the anti-tuberculosis campaign.

MAINTENANCE OF HEALTH IN ADULTS*

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FEW, IF ANY, of public health services have been created primarily for the maintenance of the health of adults, except those dealing with communicable diseases, the worker, or the child. The adult at all ages shares in the benefit of services planned largely for children, and in this way has gained.

The resources for future benefit to adult health will be largely those which depend on personal initiative and acceptance of responsibility for their cost, rather than through expansion of public agencies, official or volunteer. A higher standard of living, a simpler philosophy of life, and more of the quality of social justice will be leading general factors.

Specific services will be chiefly a self-supporting, paid visiting nurse service for prevention and care of sickness, and the periodic health examination.

To paraphrase a presidential aphorism, there should be less government in health and more health in government.

Why the adult should be separated from the child and from the worker does not appear clear to me. Is not most that is best and healthiest in the adult the remnant of his childhood? Is an adult who is not some kind of worker worth our time and attention? It is not a consideration of age—a discussion of the preventive aspects of geriatrics—that is called for, but a critical review of the conscious rather than the accidental factors which have contributed to the development of health in adults, *i.e.*, men and women of ages beyond the control of boards of education, at or beyond the age of consent.

The past activities of official health agencies, so far as they have particularly concerned adults, have been confined to the still uncompleted protection or regulation of environment and the application of sanitary law to the control of communicable diseases.

With the exception of regulatory legislation dealing with standards of environment of homes, shops, mines, public places, means of transportation, etc., in the interest of health, higher wages, etc., and of limitation imposed upon personal freedom and possessions in the interest of communicable disease prevention, and of commercial honesty in food and drink, health departments have done little or nothing specifically for adults. Of course, we might consider that education in diet and exercise for grown people has been a substantial service, or that prenatal care has been primarily for the mother rather than for the babe; or think of diagnosis of tumor tissue for possible cancer or of the occasional general health clinic as being primarily for health maintenance rather than for recognition and guidance to the treatment of disease.

Briefly, I should say that effective contributions to adult health have been accomplished through at least one of the four phases of public health work already discussed, namely, by education and protection of child health, by control of communicable diseases, by improvement of environment and, in particular, of the conditions of work.

Is it not interesting that, although the most successful efforts of health workers

* Read before the General Session of the American Public Health Association at the Fifty-third Annual Meeting at Detroit, Michigan, October 22, 1924.
[Editor's Note.—This is the third paper to be published on the Values in the Maintenance of Health. *A.J.P.H.*, January and February, 1925.]

have been those devoted to saving infant life—and this is spoken of as the children's day in the history of the world—there never was a time when children of all ages, or specifically under five years of age, represented so small a proportion of the population. Our very success with childhood has emphasized the preponderant unfinished or untouched job of the adult now enjoying an almost unheard of likelihood of life.

It is indeed time that we stood off to view our efforts as members of the very group which now represents our most imposing clientele.

I am avoiding the use of numerical expression of effort and result in the maintenance of health of adults not so much for fear of ambuscade by biometrists and statistical virtuosos, as because there is little honest record of cause and effect which can be conjured into a safe proof that any particular effort of organized health work has materially improved adult health.

A few years ago we were quite unnessarily frightened into the erroneous belief that there had actually occurred a retrogression in the health of adults over forty-five years of age. A more mature, longer and less biased study shows that every age shares to some extent in our advancing safety of life and yet such rare and scanty health services as can be pointed to in the belief that they have specifically helped the adult have been of quite too recent origin and application to be accepted as having been major participating causes in the health of present day adults, except as they fall under the categories of workers' health service, control of communicable disease or improvement of environment.

What we may do in the future depends more upon a renewed interest in a simple, frugal and rational philosophy of life, a physiological concept of existence rather than by the introduction of new functions into official or volunteer health agencies. As we adults have been persuaded by our better natures to give the child a fairer chance for survival, we must presently put a stop to the present attitude toward life expressed in current experience that death from violence is so common.

As a general principle, the human being, the most adaptable of all animals to changes in his manner of life, pays some penalty for every variation from a due regard to physiological rest and activity of his various functions. Any occupation, pleasure or idleness which fails to use man's functions, or fails to permit him time and quality of rest exacts a temporary or permanent penalty upon him and his children.

What we speak of as the higher standard of living is not so much a better mode of life than has occurred in the past, but a spreading of the protecting wing of social and economic effort over those having a specialized and elaborately mechanized existence, particularly in work, though often too in pleasure and idleness. This has made of their lives an artificial process incompatible with health or healthy rearing of children.

Fresh air, sunlight, space, time and peace of mind for rest and recreation are the desiderata for adults sought by a better environment and rational or physiological conduct of life.

When we move outside of the categories of hygiene for the worker and the child, communicable disease control and control of environment, we must search far to find any effective health service provided by official or volunteer agencies with the sole object of maintaining health of adults.

What has done most to improve the health of adults?

Inheritance of those qualities inherent in long-lived stocks.

Guidance of nourishment of childhood.

Prevention of infections and intoxications in childhood.

Education at school.

Better conditions of work—the place, the hours, the wages.

Better housing.

Visiting nursing.

Industrial and mercantile medical services.

Periodic medical examinations.

While no excuse is needed for prevention of communicable disease, for education in schools and for that matter in all other groups of the community, I question the soundness of any policy of official or volunteer service, whether for adults or children, which for the sake of quick and easily proved results, relieves the beneficiary or the guardian, of the primary duty of seeking and paying for the service.

Industrial hygiene provided by the employer is less valuable than when organized as self-protection by the worker.

School health service will continue to be a makeshift until parents themselves provide the equivalent of it for their own children at their own expense.

Prenatal work will never be more than superficially effective until the fathers of the United States take the job of buying it for their wives.

No legal means of compelling eugenics will accomplish results whether in preventing mental or physical ills. Benefits of inheritance depend on the factors of social conduct determined by personal and free standards, and selection.

The two factors chiefly responsible at present for betterment of adult health are the services of the visiting nurse and the periodic medical examination, and it is from these that I particularly expect further and more gratifying results because of two main reasons: first, that they cannot become universal quickly, and second, that they cannot be provided out of tax money or through volunteer services for the whole community. It will take at least a generation of education of the public, and quite as much of physicians and nurses to have these two factors used widely and intelligently enough to impress all the people.

It is to my mind inconceivable that any community will tax itself $6 per capita each year for a visiting nurse service run by the local government, and $5 to $10 a year for medical examinations, and I have no doubt that through private employment better service and a more permanent impression upon the health of adults will be made by these two health resources.

I look to the gradual spreading of the conception and application of what we can briefly describe as social justice, combined with an appreciation of the intimate personal individual responsibility for health, and its dependence upon the professional skill, teaching and guidance of doctor and nurse, to bring to all adults the practical benefits of applied preventive medicine, which now reaches a few groups, such as the army, some civil servants, a few of the industrially employed and a handful of the well-to-do.

In concluding, may I be permitted to suggest that sociology, economics, psychology and international law are destined to make as much, if not greater, contributions to adult health through the established channels of popular education, than bacteriology and sanitary science have in the past.

What is good for the maintenance of health is good for the nation, and although we rarely find among us such health statesmen as Biggs and Gorgas, we may all be advisers of statesmen who see in health the greatest wealth of peoples.

If we are true to our profession and cleave closely to the truth, we may establish by education an understanding of the meaning of preventive medicine which will not only result in a greater influence of its teachings in the policies of peoples and governments, but will make clear the fact that military, social, religious and economic wars, whether local, civil, or international, are incompatible with such manner of life as meets our ideals for our client, the whole public, for whom we seek relentlessly to secure a nearer approach to the sound mind in the healthy body.

THE USE OF CIVIC AND RELIGIOUS ORGANIZATIONS IN PUBLIC HEALTH*

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AN OFFICIAL local health department should, in my opinion, embrace within its activities work on all important health problems which the community presents. The work done should be adequate, and it should be distributed between the various health problems on the basis of the importance of the beneficial results which might reasonably be expected to accrue from the effort put forth. Where all health problems are not embraced within the scope of the department's work, or where the work is inadequate or improperly distributed, organization is incomplete, and smooth, efficient coöperation with other agencies cannot be had with that natural ease essential to the greatest success.

The advice and efforts of federal, state and voluntary health agencies, as well as all interested local groups or individuals, should be directed toward securing a well balanced department adequately supported financially and morally. When this is accomplished, the department should be vested with the duty of leadership and responsibility for all local health work done in the community. Any interest which subscribes to this plan should be encouraged, informed and set to work attending first to its private health problems and second to supporting community health work.

Any latent interest, antagonistic to this plan of health work, lurking in any individual or group, should be allowed to remain latent. When opposition persists it should not be ignored. Generally speaking, the attention given it should not be denunciatory and nothing more. A good plan is to rub its delicate, flimsy shins, ignorance and prejudice, firmly, persistently and dispassionately with a hard, rough brick of facts, which will either cause withdrawal from the contact or render it no longer capable of supporting the opposition.

Voluntary health agencies at work on specific problems should transfer their activities as soon as the governmental agency is able to receive them and continue the work with efficiency. In giving over its work, the agency's interest in the work transferred should not cease. Established operating organizations with such broad minds are not always met with. The clash of ideas and personalities and the magnifying of small unimportant details is all too frequent when changes such as these are contemplated or are in process of accomplishment.

It is as important for health departments to confine their activities to health work as it is to extend their activities to the entire health field. Medical relief should be left to hospitals. Welfare and social service work and moral and religious reforms should be left to their proper agencies, and most of health education to departments of education. Each agency should be made to see its public health opportunity and duty and should be assisted, if need be, to secure the information and means necessary to perform this duty. Departments of health can be of great assistance in this.

Health departments coöperating with hospitals might lead the latter to see and enter a wider field of community service

* Read at the Forum Session of the American Public Health Association, at the Fifty-third Annual Meeting, at Detroit, Michigan, October 22, 1924.

if they feel certain that the department of health is not interested in encroaching upon medical relief. The same holds true for welfare and social service work and reform movements.

Departments of education will leave school medical inspection to departments of health where they are sure that routine school procedure will be benefited and not interfered with by such action. Their proper business is education. It would be regarded as absurd if some official or unofficial agency other than the department of education should undertake to teach all of the writing needed by a community. It is more than possible that the same is true of health education. Certainly, departments of health will have done their most effective health education when they have performed well while handling health problems which confront them. This is the only good base from which to launch easily and safely health propaganda and publicity. Through these we reach a part of the public, but as a rule, it is that part best informed and least in need of health information. All too frequently health propaganda and publicity are accepted as health education which is true only to a slight degree.

It is hardly true that a special system of pedagogic methods is required to successfully teach health to children. The greatest obstacle to adequate health education in our schools lies in the fact that teachers are lacking in health information. The universities, colleges and normal schools, where teachers are trained, should recognize this deficiency and remedy it. Departments of health might, through special courses to teachers, temporarily and partly remedy this while the proper training institutions are neglecting this duty for one cause or another. Studying health affords facts for mental training as well as useful information applicable to our daily regime.

Proper relationship with the above and other agencies can be built in no way except through mutual confidence, which will arise only when effective procedure, honesty of purpose and fair dealing are employed.

There is too little honest coöperative work attempted between agencies and too much antagonistic talk. There is too much neglect of important legitimate fields of work for work outside one's proper sphere, where, on this controversial ground, antagonism most frequently springs up and flourishes. There is too little frankness about our own and too much ignorance about others' work. All of this must be overcome before the health work of a community will prosper to the fullest extent.

The Relation of Visual Defects to Efficiency—From 10 to 12 per cent of children graduating into the high schools have rather marked defect of vision. The necessity for more intensive supervision of the vision of school children is well illustrated by a series of studies of particular problems of illumination as they relate to the office work in general of a number of post office employes to determine, if possible, the relationship between the existing conditions of illumination in the post office and the vision of the post office employes and the relationship of various degrees of illumination efficiency.

It was observed:

1. That the number of eye defects and the number of cases of defective vision vary, in a general way, as the work processes require increased intensity of eye work, the largest number of defects and the poorest vision being found in the group of workers doing the most intensive eye work.

2. That the employes working under conditions of inadequate illumination had a smaller percentage of normal vision and a greater percentage of certain eye defects than the employes working under all or part-time daylight.

3. That the higher the intensity of illumination up to a certain point the greater was the rapidity with which the work was performed—Studies in Illumination, *Pub. Health Bull. No.* 140 (July), 1924.

EDITORIAL SECTION

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TRENDS IN HEALTH LEGISLATION

LAW-MAKING is one of the great American pastimes. Every other year the legislatures of some forty states assemble and proceed to consider a vast number of legislative bills and to enact a proportion of them into new statutes. During the 1923 legislative sessions there were abstracted in the bulletins on state health legislation by the United States Public Health Service and the National Health Council over 800 bills relating to public health. Of these, about 200 became laws. No attempt has been made in 1925 to keep track of all the bills pertaining to health, but the JOURNAL has made an endeavor to collect copies of all of the new state health laws. The Law and Legislation Section of this issue summarizes reports from 22 states which indicate that there are 136 new laws, or amendments to old laws, dealing with some phase of the public health. Doubtless information from the remaining states will bring the total to the figure of 1923, or even higher.

Food regulation is the subject which legislators apparently consider of most importance to health, for this year more measures were passed on this subject than any other and in 1923 it ranked close to the top. Food is, of course, important in its relation to human health, but is it the subject which most needs legislative enactment in order the better to conserve vitality in the several states? Measures dealing with various aspects of municipal administration were also popular, though many of these refer only to governmental or political matters, such as the organization of sewage disposal districts, bond issues, and the like, though there were a number of new vital statistics laws. It is refreshing to note that nuisances seldom come in for attention these days, and but few chiropractic bills were successful this year, though many were introduced. The usual grist of anti-everything measures met their customary defeat, though some were on the verge of being adopted. It is a continuous fight against an unscrupulous foe.

Tuberculosis continues to receive considerable attention every year, and rightly. The reason for this is usually a well organized machine in each state to see that this topic does get attention, and in this fact there is a lesson for sanitarians interested in securing favorable action on other subjects. A few years ago many measures on the venereal diseases were in vogue, which was proper, as there had been a dearth of laws on this subject. In 1923 there were a number of new laws dealing with narcotics, but none at all in 1925, so far as the reports now indicate. Child hygiene did not come in for so much attention this year, as in the past. A

progressive sign of the times, however, is the fact that mental hygiene has for the last few years gradually been getting legislative attention. It is to be hoped that eventually saner laws on this important subject will be widespread.

Sound, scientific, practical, workable, enforceable legislation is one of the several fundamental necessities for efficient public health administration. No law should be proposed unless it is also proposed to enforce it. Much new and better health legislation is still needed, and, what is far more important, better health laws are necessary. Sanitarians have no desire to contribute to the alarming multiplicity of the laws, but they are rightly interested in seeing more progressive health legislation and more effective sanitary measures enacted, to the end that the public health may be fostered and advanced and the vitality, and with it the prosperity and happiness, of the people of the states enhanced.

WHAT IS PASTEURIZATION?

THE LAST edition of Webster's New International Dictionary defines pasteurization as "a process devised by Pasteur for preventing or checking fermentation in fluids, such as wines, milk, etc., by exposure to a temperature of 55°–70° C. (131°–158° F.). While this treatment does not destroy spores, it avoids the injurious effects that might accompany complete sterilization." The Standard Dictionary gives a similar definition limiting the temperature range to 144°–149° F. Federal, state and municipal laws and regulations give other definitions which specify not only the temperature of the heat treatment but also the minimum, and in some cases the maximum, period of time that the treatment shall be applied to milk that is to be sold as pasteurized milk.

The process originally devised by Pasteur to check fermentation in wine and beer is now chiefly used, in the United States at least, to destroy pathogenic microorganisms in milk without affecting its taste or seriously injuring its original food value. For this purpose it would seem to be possbile to define pasteurization within rather narrow limits. The tubercle bacillus may be called the determining organism since the other pathogenic microörganisms apt to be found in milk are destroyed more easily by heat than is this bacillus. Different investigators have found the tubercle bacillus to be killed at different temperatures in the same period of time, and in different periods of time at the same temperature. Such conflict of laboratory testimony has made it difficult to set adequate standards for commercial pasteurization.

In 1910 and succeeding years the New York Milk Committee, a group working to improve the milk supply to reduce infant mortality in New York City, found the need for an authoritative standard for pasteurization. Its appointed body of experts, the National Commission on Milk Standards, after a thorough study and investigation unanimously recommended a temperature of 145° F. for 30 minutes. This standard was endorsed by many authorities, widely accepted by sanitarians, and made a part of many official regulations. There have been continued attacks upon this standard inspired by both science and commerce, a few attempts to raise it and many, especially vigorous, to lower it.

If the only effect of heating milk were to destroy the bacteria in it, pasteurization would probably not be a subject of controversy. However, heat treatment affects the apparent cream volume, increasing or decreasing this apparent volume above or below that of untreated milk according to the heat treatment given. The consumer with no other obvious criterion judges the quality of milk largely by the

depth of the visible stratum of butter fat. He will usually regard milk with little apparent cream as less desirable than milk which shows a greater layer of cream but which as a matter of fact may contain less butter fat. Until the public has learned to accept a more reasonable and surer standard of milk quality than the *visible* fat content the dealer naturally wants the cream content to appear as large as possible. While the sanitarian is also concerned with the apparent cream volume, his first consideration is that milk given commercial heat treatment be rendered non-infectious, that is, pasteurized in the public health sense.

The standards of the New York Milk Commission in the opinion of health authorities were adequate for public health protection. With the development of milk supervision and the improvement of pasteurizing machinery susceptible of more delicate and certain control it seemed right to examine the matter anew. An opportunity to do this was created by the Borden's Farm Products Company in 1921. This concern made available funds, personnel and facilities for a study under the direction of Dr. Charles E. North, who invited others to coöperate with him. The report of this study has now been published by the U. S. Public Health Service and is reviewed in this issue.*

At the Detroit meeting of the American Public Health Association last year the Association endorsed in a formal resolution the pasteurization of milk as "the most practicable and rapidly carried out measure for the safeguarding of the milk supply." The resolution did not prescribe any standard for pasteurization, leaving this phase of the matter for the consideration of the Committee on Milk Supply of the Sanitary Engineering Section. This committee deferred its recommendation of standards for safe pasteurization until the completion of the experiments carried on by Dr. North and his associates. Whether or not the Committee on Milk Supply or the American Public Health Association will endorse the recommendations of this group remains to be seen. The matter will doubtless be considered at the St. Louis Meeting this fall. Meantime, public health officials are advised to await the report of the Committee on Milk Supply before rewriting their milk regulations.

* See page 723.

ASKING QUESTIONS

THE TREMENDOUS progress in public health as well as in curative medicine has been due to interchange of opinion, expression of group judgment and intensive study, based upon questions arising in the minds of those interested in the solution of actual medical, surgical and health problems. In this age of specialization, any inquiry from those who concentrate on the study of just one phase of the broad field of public health, is indeed pertinent and proper.

Men, no matter how preëminent, do not hesitate to seek advice and assistance from those whose opinions are based upon concentration and the devotion of their time and efforts to certain aspects of the work. Clinicians have never hesitated, if they have desired to make progress, to invoke the assistance and ability of the laboratory man for the solution of their problems. Diagnosticians have frankly appealed for the assistance of others to aid them in arriving at correct conclusions.

The collaboration evident in many leading text books with the compiler, showing no hesitancy in giving credit and frank acknowledgment to the advantages derived from the selection of leaders in the particular subjects to guide him in the issuance of something which he hopes to be standard, is a most striking tribute to specialization.

Asking questions has been conducive to much progress and has never been deemed an evidence of lack of knowledge, but rather an endeavor to determine what is best and most up-to-the-minute.

In many instances, questions are asked for the purpose of determining whether one's views agree with another's and whether one's policies are sound.

With this in mind, the Forum Committee of the American Public Health Association was inaugurated and the Forum Session at the coming Annual Meeting in St. Louis offers a splendid opportunity for the solution of mooted and, in many instances, much discussed problems. One owes it to himself and to the community he serves, to avail himself of this opportunity to have many perplexing things solved by specialists, selected and trained in the particular subjects in question. One should have no hesitancy in asking questions because, as already stated, the asking displays a keen desire to ascertain the opinion of men making intensive study and testing up-to-the-minute knowledge of the subject in question, and who gladly offer their services to the members of the Association, a privilege of which each member should avail himself.

The American Public Health Association is anxious to stimulate the asking of questions, having in mind the beneficial results, not only to the members, but to the Association itself which, after all, has its constant obligations to perform, namely, the elevation of the standards of public health.

LEPROSY IN THE PHILIPPINES

IT IS perhaps not known to the average person that we have a large number of lepers in the Philippine Islands, with which we have a large and important trade, and for which we stand responsible. The leper colony at Culion is said to be the largest in the world as well as the best. For 17 years it has been in operation and stands out as a great example of what can be done in eradicating leprosy from the world. One hundred and four lepers have been released as cured, and there are now 222 who are negative to the organism, and who are being kept under observation during a two-year period before releasing them to go back to their families and ordinary occupations.

We must remember that General Leonard Wood, who is a physician, and who played such a large part in the eradication of yellow fever and other diseases from Cuba, is the Governor-General of these islands. He is intensely interested in the leper question and his medical knowledge puts him in a position to understand the needs of the case, as well as its proper handling, while his executive ability insures the proper carrying out of the work. It is evident, however, that it is difficult to interest people in this proposition and that the necessary money for carrying out the plans is lacking. There is even a movement on foot to abolish the segregation of the lepers. In view of the proven efficacy of this method of handling lepers as shown by results in the Scandinavian countries particularly, but also in other parts of the world, it is hard to understand the desire to abandon it. Such an action would not only destroy the excellent work which has been done during 17 years, but would put the Philippines back where they were before the Americans took charge of them.

From the situation of the colony, and in view of the fact that most of the

cases come from one island, there seems to be an unusually good opportunity to determine the method of spread of this disease. The Culion Station has recently been visited by American physicians, as well as by several Englishmen specially versed in the handling of leprosy. Their reports agree in pointing out the excellent work which has been done, the unusual opportunities which exist for further constructive work and the danger of letting down the bars.

Since the Philippines are a part of the United States, we should take a national pride in the eradication of this disease which has been a curse to humanity for so many centuries. While General Wood is the Governor-General of the islands, we can confidently expect an unusually intelligent and active interest in this phase of the governmental activities, which means so much not only to the people of these islands, but to the world.

ASSOCIATION NEWS

COMMUNITY SUPPORT FOR HEALTH OFFICERS

At the recent meeting of the Associated Advertising Clubs of the World, the Executive Secretary of the American Public Health Association presented a paper before the American Community Advertising Association on "The Health Appeal in Community Advertising." The audience which consisted of representatives of chambers of commerce, convention bureaus, etc., expressed great interest in this paper and passed the following resolution which has been transmitted to the chambers of commerce throughout the country:

WHEREAS, the public health is of utmost importance, and

WHEREAS, the plan of the American Public Health Association for rating cities on the basis of their protection of the public health greatly affects the program of community advertising; therefore, be it

RESOLVED, that we, the members of the American Community Advertising Association of the Associated Advertising Clubs of the World, recommend and urge that all chambers of commerce and all secretaries of chambers of commerce include this vital subject on the program of their activities and the program of their meetings with a view to giving the health officials of their respective cities and states all possible assistance and support in improving the heatlh rating of their communities.

S. T. DARLING, M.D., 1872–1925
NORMAN V. LOTHIAN, D.P.H., 1889–1925

Drs. Darling and Lothian and one other, members of the League of Nations for the study of malaria in Palestine, were killed in an automobile accident near Beirut, Syria, on May 22.

Dr. Darling was born in Harrison, N. J., in 1872. He was a member of the faculty of the College of Physicians and Surgeons in Baltimore, in 1903; chief of the laboratory of the Panama Canal from 1906 to 1915; chairman of the board to investigate health conditions in Java and the Fiji Islands under the Rockefeller Foundation; author of books and articles on hookworm and malaria.

Dr. Lothian was born in Aberdeen, Scotland, in 1889. He was field epidemiologist for the league of Nations; Major, R.A.M.C.; formerly instructor in hygiene, Royal Army Medical College; specialist sanitary officer and anti-malaria officer. Dr. Lothian delivered a paper before the Vital Statistics Section at the Boston Annual Meeting in 1923.

QUALIFICATIONS OF NURSES

At the meeting of the Conference of State and Provincial Health Authorities of North America, the report of the Committee of the Section on Public Health Nursing of the A.P.H.A. on *Qualifications for Public Health Nursing Positions* was approved without amendment.

The Committee is composed of representatives of the National Organization for Public Health Nursing, the American Public Health Association and the Conference of State and Provincial Health Authorities of North America. The report was approved first by the N.O.P.H.N. and approved with slight amendments by the A.P.H.A., so that it now has the approval of all three organizations represented on the committee.

NEW WORKERS FOR THE A.P.H.A.

James A. Tobey has recently been appointed by the Executive Board to represent the Association in Washington and report for the JOURNAL on matters relating to public health legislation and federal public health work.

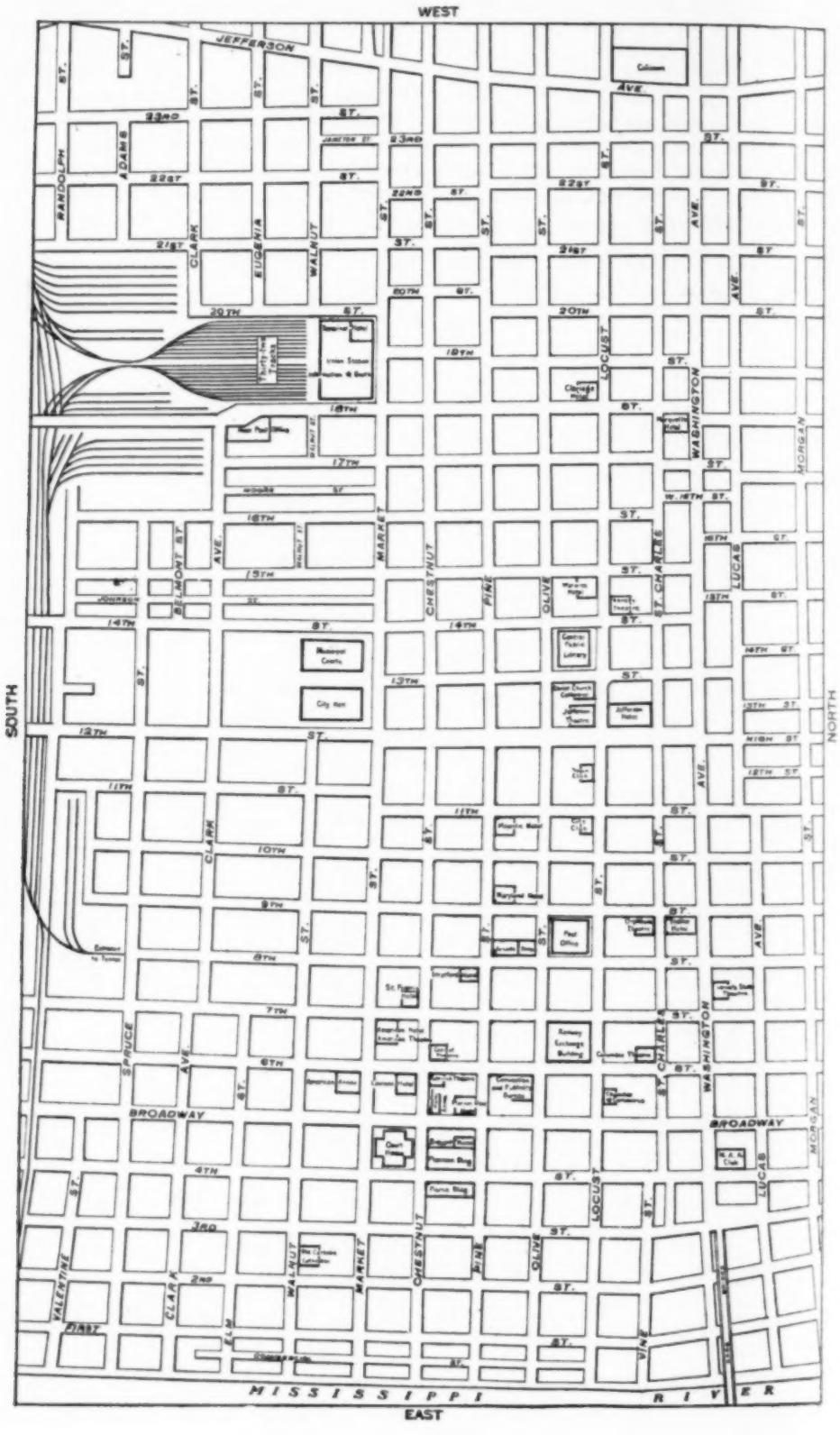
Professor Ira V. Hiscock, of Yale School of Medicine, is temporarily engaged by the Committee on Municipal Health Department Practice in the preparation of reports of health service in the one hundred cities of 70,000 population and over surveyed in 1923.

Elizabeth H. Fleeson, Ph.D., a recent graduate of the Department of Public Health, Yale, has been appointed assistant to the Field Director of the Committee on Municipal Health Department Practice.

LIST OF MEMBERS

Proposed for election to the A.P.H.A., June 1 to June 30, inclusive.

Arthur V. Allen, M.D., Chicago, Ill., Chief Surgeon, Commonwealth Edison Company, Chicago, Ill.
George Elliott Atwood, M.D., Waycross, Ga., Commissioner of Health, Waycross and Ware Co., Georgia.
Annie Black Boyd, R.N., Hamilton, Ont., Canada, Supervisor of Public Health Nurses, Hamilton, Ont., Canada.
Elizabeth T. Brown, B.S., Kansas City, Kansas, City Technician.
Arthur Vernon Clarke, M.D., New York, N. Y., with Employes of the Consolidated Gas and Affiliated Companies, New York, N. Y.
Ernest C. Coker, Louisville, Ky. (Assoc.)
George Watson Dufty, M.D., Nassau, New York, Health Officer, Cons. Dist. Nassau, N. Y.
Martha M. Eliot, M.D., New Haven, Conn., Director, Division of Hygiene, U. S. Children's Bureau, Washington, D. C.
Jeanette Evans, M.D., Ithaca, New York, Medical Adviser of Women and Assistant Professor of Hygiene, Cornell University.
Frederick William Fabian, East Lansing, Michigan, Associate Professor of Bacteriology and Hygiene, Michigan State College.
David Emerson Ford, M.D., New Bern, N. C., County Health Officer.
Virginia M. Gibbes, R.N., Knoxville, Tenn., Director of Public Health Nursing Service, Knoxville Dept. of Public Welfare.
D. Gordon Gill, M.B., D.P.H., Montgomery, Ala., Epidemiologist.
Joseph Lee Goodwin, M.D., Branson, Mo.
Pearl Griffith, Jacksonville, Fla., Laboratory, State Board of Health.
Carolyn M. Hidden, A.B., New York, N. Y., Field Supervisor of Nurses, Metropolitan Life Ins. Co.
Hortense Hilbert, A.B., R.N., Minneapolis, Minn., Educational Agent, State Board of Health.
Wilder De Wolfe Hubbard, M.D., Florence, Ala., County Health Officer.
W. Scott Johnson, A.B., B.S., Engr., Jefferson City, Mo., Assistant Engineer, State Board of Health.
R. Rives Jones, M.D., Winston-Salem, N. C., School Physician.
Robert A. Kehoe, M.D., Cincinnati, Ohio, Department of Physiology, University of Cincinnati, Medical Consultant, Ethyl Gasoline Corp., Dayton, Ohio.
Joseph N. Kiefer, A.M., M.D., Buffalo, N. Y., Superintendent, Bureau of Communicable Diseases and Vital Statistics, City of Buffalo.
Willis T. Knowlton, Los Angeles, Calif., Sanitary Engineer in office of City Engineer.
Erna Kowalke, R.N., Milwaukee, Wis., Superintendent of Nurses, Milwaukee Visiting Nurse Association.
Blanche T. Lambe, R.N., Greensboro, N. C., Supervisor Nurses, City Health Department.
Alex M. Lesem, M.D., San Diego, Calif., County Health Officer, San Diego County, City Health Officer, San Diego, Calif.
Benjamin J. Marshall, Oklahoma City, Okla., Major Medical Corps, U. S. Army.
Earle G. McConnell, Charlotte, N. C., Superintendent of Filtration, Charlotte Water Works.
Albert Benjamin McCreary, A.B., M.D., Rockingham, N. C., Health Officer, Rockingham, N. C.
Grundy E. McDonald, M.D., Long Beach, Calif., City Health Officer.
Clare McGuirk, New Rochelle, New York, Laboratory Technician.
Z. P. Mitchell, M.D., B.S., Jackson, N. C., County Health Officer.
Elisha M. Moore, M.D., Clayton, Ala., County Health Officer.
Henry L. Morency, Ph.B., D.V.M., Boulder, Colo., Food and Sanitary Inspector for City of Boulder, Colo.
William Neville O'Bannon, M.D., New Madrid, Mo., County Health Officer.
Kathlene O'Flynn, R.N., Bonne Terre, Mo., Public Health Nurse, St. Francis County Health Department.
C. E. Price, M.D., Robinson, Ill., County Health Officer.
M. J. Ragland, A.B., D.V.M., Salisbury, N. C., Meat and Milk Inspector for City of Salisbury and County of Rowan.
William Jordan Rapp, B.S., New York, N. Y., Bacteriologist.
Bessie M. Richardson, R.N., Tulsa, Okla., Supervising Nurse, Tulsa County Public Health Association.
Harry G. Samson, Jacksonville, Fla., Mortician. (Assoc.)
Lillian Richardson Smith, M.D., Lansing, Mich., Director, Bureau of Child Hygiene and Public Health Nursing, Michigan Department of Health.
Sidney Abraham Smith, Hilo, Hawaii, Deputy Chief Sanitary Inspector Board of Health, Territory of Hawaii.
Joseph B. Sonnenschein, Chicago, Ill., Supervisor Venereal Disease Control, Chicago Department of Health.
George D. Stahley, M.D., Gettysburg, Pa., Medical Director in Gettysburg College.
Belva L. Swalwell, B.S., M.A., Cedar Falls, Iowa, Assistant Professor in Hygiene and Sanitation in Iowa State Teachers College.
Mary Elizabeth Tennant, B.A., B.Sc., R.N., New York, N. Y., Field Supervisor, Nursing, Welfare Division, Metropolitan Life Insurance Co.
Elnora E. Thomson, R.N., Salem, Oregon, Marion County Child Health Demonstration, Director for Nursing Service.
Augusta G. Williams, M.D., Brookline Village, Mass., Full-Time Medical Inspector, North Tonawanda, N. Y.
John Watkins Williams, M.D., Washington, N. C., Beaufort County Health Officer.
Eleanore Zuppann, R.N., B.S., Minneapolis, Minn., Superintendent, Visiting Nurse Association, Minneapolis, Minn.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EUGENIA
WALNUT
MARKET
CHESTNUT
FINE
OLIVE
LOCUST
WASHINGTON
MORGAN
LUCAS
ST. CHARLES
BELMONT
SPRUCE
VALENTINE
BROADWAY
Union Station
City Hall
Post Office
MISSISSIPPI
RIVER

ANNUAL MEETING INFORMATION

ST. LOUIS HOTELS

Hotels	Single Room With Bath	Double Room With Bath
AMERICAN 7th and Market Sts.	$2.50–$4.00	$4.00–$5.00
AMERICAN ANNEX 6th and Market Sts.	$2.50–$4.00	$4.00–$5.00
BUCKINGHAM HOTEL AND ANNEX* Kingshighway and W. Pine	$2.50–$4.00	$4.00–$6.00
CHASE HOTEL Kingshighway and Lindell	$2.50–$4.00	$4.00–$6.00
CLARIDGE 18th and Locust Sts.	$2.50–$5.00	$4.00–$7.00
CORONADO Lindell at Spring	$2.50 & up	$5.00 & up
GATESWORTH Union and Lindell	$4.00	$6.00
HAMILTON HOTEL Hamilton and Maple	$1.50–$3.50	$3.00–$5.00
JEFFERSON* 12th and Locust Sts.	$3.00–$8.00	$5.00–$10.00
LAUREL HOTEL* 9th and Chestnut Sts.	$2.50 & up	$4.00–$5.00
LINDELL PLAZA Lindell at Boyle	$2.50	$4.00
MAJESTIC HOTEL 11th and Pine Sts.	$2.50–$3.00	$4.00–$6.00
MARQUETTE 18th and Washington Ave.	$2.50–$4.00	$4.50–$6.00
MARYLAND* 9th and Pine Sts.	$2.50–$3.50	$4.00–$5.50
MAYFAIR N. 8th St.	$3.00–$6.00	$4.50–$8.00
MELBOURNE HOTEL Grand and Lindell	$3.00–$5.00	$4.50–$8.00
STATLER 9th and Washington Ave.	$3.00–$7.00	$4.50–$9.50
WARWICK 15th and Locust Sts.	$2.50–$4.00	$4.00–$6.00

*These hotels have additional rooms without baths at a slightly lower rate.

The map on the opposite page shows the location of the downtown hotels, except the new Hotel Mayfair, which is on the southwest corner of 8th and Charles Streets. This hotel, which will be completed by the time of the Annual Meeting, is the nearest to the Headquarters for the meeting, which will be at the Hotel Statler. The west end hotels, which are not shown on the map, may be conveniently reached by street car and bus in 10 to 15 minutes from the Hotel Statler.

Delegates are urged to make application for reservations directly to the hotels, as early as possible to avoid inconvenience later.

BRING THE LADIES

The feminine members of the families of A.P.H.A. delegates may make their plans now to accompany the male contingent to the St. Louis Annual Meeting with no fear that time will hang heavily on their hands, for the Local Committee in charge of Annual Meeting arrangements is making special plans for the entertainment of women guests. While sections are in session and the men engaged in bringing themselves up to date in matters scientific, the ladies will have ample opportunity to discover what the latest developments are in matters of fashion and other things of equal importance. Shopping tours, luncheons, bridge parties, teas, motor drives and sight-seeing trips will occupy madame and mademoiselle so that they may be entirely independent of male escort. St. Louis shops are notable for their excellence; St. Louis possesses some famous clubs and dining-rooms; its parks cover thousands of acres and contain miles of beautiful roads which reveal panoramic views of the city and its surroundings; it has art galleries, world-famous gardens, and thea-

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HOTEL RESERVATION BLANK

To.....
(Name of Hotel)

Please reserve for me.....rooms for.....persons for the A. P. H. A. Meeting. (Cross [X] is placed after my preference.)

Single room .....Double room .....

Maximum rate per day for room $.....Minimum rate per day for room $.....

I expect to arrive Oct. ..... If date of arrival is changed I will notify you at least 24 hours in advance.

Please acknowledge this reservation.

Name .....

Street Address .....

City..... State.....

If this blank is addressed to the Hotel Statler, please check one of the following:

.....1. If accommodations are unavailable, please make reservation for me at one of the following hotels.....

.....2. If accommodations are unavailable, please advise me.

tres. It offers entertainment to suit every taste. Best of all, St. Louis is noted for its gracious hospitality. The Local Committee promises to make a departure from past custom in the American Public Health Association in the generosity and extent of its entertainment for the ladies.

RAILROAD FARES TO ST. LOUIS

Members of the Association will again be able to travel to the Annual Meeting at a reduced fare. A reduction of 25 per cent on the round trip has been granted by practically all the railroads in the United States and Canada on tickets costing over $1.00. The identification certificate which will be necessary to secure the special rate will be mailed to each member of the Association about September 1. If by chance you do not receive your certificate by September 15, and you expect to attend the St. Louis meeting, kindly advise the Executive Secretary, 370 Seventh Avenue, New York City, enclosing a self-addressed envelope, and a certificate will be mailed to you at once.

Certificates must be presented at the local ticket office when the ticket is purchased. Ticket agents will not grant the special rate unless the certificate is presented. Only members of the Association are entitled to use these certificates, and but one certificate is required for each family.

The dates of the sale of tickets will vary according to the distance of starting point from St. Louis. But in general they will cover the period of October 15 to 21, inclusive. Definite information may be obtained from local agents.

Tickets will be validated at St. Louis by the agents at the regular ticket offices of the lines used on any day after arrival. They must be used returning to reach the original point not later than midnight of October 28.

Railroad fares from various centers to St. Louis are indicated below. Pullman rates include surcharges.

	Special Rate			
	One Way	Return Trip	Lower Berth	Upper Berth
Atlanta, Ga.	$22.53	$33.80	$6.75	$5.40
Baltimore, Md.	32.54	48.81	9.00	7.20
Boston, Mass.	43.58	65.37	12.00	9.60
Buffalo, N. Y.	25.66	38.49	7.50	6.00
Cleveland, O.	19.10	28.65	5.63	4.50
Chicago, Ill.	10.41	15.62	3.75	3.00
Cincinnati, O.	12.40	18.60	3.75	3.00
Dallas, Tex.	24.03	36.05	8.25	6.60
Denver, Colo.	32.80	49.20	10.13	8.10
Detroit, Mich.	17.76	26.64	4.50	3.60
Indianapolis, Ind.	8.87	13.31	3.75	3.00
Jacksonville, Fla.	42.76	64.14	10.50	8.40
Kansas City, Mo.	10.04	15.06	3.75	3.00
Los Angeles, Cal.	73.34	110.01	22.50	18.00
Louisville, Ky.	10.14	15.21	3.75	3.00
Memphis, Tenn.	11.19	16.79	3.75	3.00
Minneapolis, Minn.	20.74	31.11	5.63	4.50
Nashville, Tenn.	12.12	18.18	3.75	3.00
New Orleans, La.	25.37	38.06	7.88	6.30
New York, N. Y.	38.06	57.09	10.88	8.70
Omaha, Neb.	15.10	22.65	4.50	3.60
Philadelphia, Pa.	34.82	52.23	10.13	8.10
Pittsburgh, Pa.	22.24	33.36	6.38	5.10
Portland, Ore.	79.17	118.76	22.50	18.00
Salt Lake City, Utah	50.92	76.38	15.38	12.30
San Francisco, Cal.	73.34	110.01	22.50	18.00
Seattle, Wash.	79.93	119.90	22.50	18.00
Toronto, Can.	25.66	38.49	9.38	7.50
Washington, D. C.	32.54	48.81	9.00	7.20

EMPLOYMENT BUREAU

HELP WANTED

Help wanted announcements will be carried free in this column until further notice. Copy goes to the printer on the 8th of each month. Mail to New York office as early as possible.

In answering keyed advertisements, please mail replies separately to office in New York City. In replying give age, professional training, salary requirement, previous positions held and three or more references.

Laboratory Technician: Young woman desired who can do water (bacteriological) and milk analyses, and examine diphtheria cultures, sputa, G. C. smears, and Widals. Salary $150 a month, with customary rules of all municipal positions. Address 606, G. J., care of this JOURNAL, New York address.

Wanted: Full-time director of health and welfare in a city of 150,000 population in Southwest. Must be a graduate of Class A Medical School—licensed to practice, or a trained sanitary engineer, and in either case must have had experience in public health work. Salary dependent upon applicant's training, experience and qualifications. Address 608, C. O., care of this JOURNAL, New York address.

Wanted: Dairy and food inspector in a city of 15,000. Applicant must be qualified to do routine milk analysis, dairy farm inspection and inspection of all places where food is sold.

Salary $150 per month, auto and upkeep furnished. Address 607, B. G., care of this JOURNAL, New York address.

POSITION WANTED

Positions wanted announcements of 50 words or less will be carried for individuals at a charge of $2.00 per insertion. Copy should be received at the New York office by the 8th of the month preceding publication.

Sanitarian desires position; graduate of Johns Hopkins School of Public Health; 12 years' experience. Can take charge of division of food and milk inspection, conduct epidemiological investigations, or handle general routine of small unit, including laboratory. Address 370, J. P., care this JOURNAL, New York address.

Wanted: Well trained and experienced man in pathology, bacteriology, serology and biochemistry desires position. Capable of doing radium emanation and microphotographical work. Holds B.Sc., Ph.D., B.Ch. and M.D. degrees. Extensive experience in teaching and contributor to many medical journals. Can furnish excellent references. Address 356, K. S., care of this JOURNAL, New York address.

Wanted: Position as health officer by graduate in both medicine and dentistry. Ten years' experience and knows all branches of public health work. Can furnish best of references from state and city officials. Registered in medicine in Massachusetts, Georgia and Florida; accredited health commissioner in Georgia, and holds certificate. Address 355, B. P., care of this JOURNAL, New York address.

Chemist-Bacteriologist; B.S. degree in chemistry; extensive training in biochemistry, bacteriology, serology and pathology. Will consider civic or clinical position. With proper inducements would open clinical laboratory. Address 366, J. L., care of this JOURNAL, New York address.

Wanted: Position as director of division of hygiene. Experience abroad and in this country. Employed at present but would like a similar position in a larger state. Address 367, I. A., care of this JOURNAL, New York address.

Wanted: Position in child hygiene or medical social service, by young woman. Recent graduate in preventive medicine and public health from a large mid-western university. Excellent references furnished. Address 369, W. M., care of this JOURNAL, New York address.

Wanted: Administrative position in public health, by physician 42 years old. Two years in U. S. Army as sanitary inspector of division. Post work in New Orleans, Chicago and St. Louis. Address 368, H. C., care of this JOURNAL, New York address.

BOOKS AND REPORTS

Report of the **Cambridge Health Education Conference**—*Called by the American Child Health Association. Published by the American Child Health Association*, 1924. Price, $1.00.

This is a report of the papers and discussions which were delivered at the Massachusetts Institute of Technology, June 23 to 28, 1924. The conference discussed (1) "The Administrator's Problems of Health Education in the Schools" and (2) "The Administrator's Problems of Health Education in Teacher Training Institutions."

Special emphasis was placed upon the health of the teacher in service, the preschool child, the personal health of the pupil, methods of instruction in health teaching, and the relation of these methods to the personnel of specialists in the schools.

Under the second heading were discussed "The Health of the Student Teacher" and "Health Education Classes in the Curriculum." The conference closed with a summary and with recommendations on courses of study, materials, and organization of the school health program.

The increasing emphasis upon the health of the preschool child, and upon the health of the teacher is particularly gratifying.

C. H. KEENE

The Laws of Health and How to Teach Them—*By Charles-Edward Amory Winslow, Dr.P.H., and Pauline Brooks Williamson. New York: Charles E. Merrill Company,* 1925. 354 pp. Price, $1.60.

This book is said to be the combined viewpoints of a teacher in a medical school and a practical school administrator. It is divided into three parts: Part One, Objectives. Part Two, Content. Part Three, Methods.

Part Two gives the usual discussion found in books on health, including some physiology, some hygiene and some sanitation. The only new thing about the book is the addition of Part Three, in which outlines of study for various groups from the first up to the ninth grade, and junior and senior high schools are given. In this section a number of poems, stories and dramatizations collected from various sources are introduced.

The book is well printed and put together.

M. P. RAVENEL

Concerning Evolution—*By J. Arthur Thompson, M.A., LL.D. New Haven: Yale University Press,* 1925. 245 pp. Price, $2.50.

Anything that Professor Thompson writes is interesting and always well worth the reading. The present book is particularly timely in view of the present agitation against the teaching of evolution, and the extreme views held by certain people who possess more of what they consider religion than they do of either knowledge or common sense.

The lectures on which the book is based were given at Yale University in 1924 under the Dwight H. Terry Foundation, the object of which is not the promotion of investigation and discovery, but rather the assimilation and interpretation of scientific facts and their application to human welfare, "especially by the building of the truths of science and philosophy into the structure of a broadened and purified religion." The book is not a systematic exposition of evolution, but rather an array of facts tending to show how the science of evolution may illuminate the religious outlook.

The author strongly refutes the oft repeated piece of silliness that Darwin taught that man was descended from a monkey. He stresses Darwin's demonstrations of man's solidarity with the rest of creation, and the fact that evolution is going on before our eyes at the present time. The book is delightfully written in the style characteristic of the author, and contains a mass of zoölogical facts which cannot but interest everyone. It is written by a scientific man who is a believer, and who sees nothing in science contrary to the Bible. He states positively that the picture drawn by the evolutionist is in harmony with the religious vision, and shows that evolution has always been towards something better—increased fineness, fullness and freedom of life.

There are a number of excellent illustrations. The book can be recommended to all seekers after truth and especially to those whose ideas may have been upset by the many extreme statements which have been spread broadcast during the past few years.

M. P. RAVENEL

Principles of Public Health Engineering—*Earle B. Phelps. The Macmillan Company,* 1925, viii+265 pp. Price, $3.00.

Professor Phelps, whose recent appointment as Professor of Sanitary Science at Columbia has been hailed with such general satisfaction, has had the keenness and the good fortune to find an important gap in the field of public health literature. There has been a real need for a book on the engineering aspects of public health written so simply and clearly as to be intelligible to the medical officer of health; and this need the book here reviewed admirably fills. Professor Phelps' experience with sewage disposal problems at the Lawrence Experiment Station and the Massachusetts Institue of Technology, with water supply problems in the Hygienic Laboratory, with ventilation problems as a member of the New York State Commission on Ventilation and with milk supply problems as a consulting expert, have equipped him in a unique degree to deal with these four topics. The book also includes good chapters on plumbing and lighting and briefer discussions of refuse disposal and mosquito and fly control. The treatment of water purification and of milk pasteurization is particularly commendable. In discussing plumbing regulations the author quite naturally follows the conclusions of the Bureau of Standards sub-committee of which the late Professor Whipple was chairman, conclusions which the reviewer believes to be somewhat reactionary, and he fails to mention the vexed problem of the running trap on the main house drain. In general, however, the book is sound and up-to-date and well-balanced. It should be in the library of every health officer.

C.-E. A. WINSLOW

Cancer and the Public; The Educational Aspect of the Cancer Problem—*By Charles P. Childe. New York: Dutton,* 1925. 268 pp.

The latest book is a common sense view of the well established facts in regard to cancer, its causation, prevention, and cure. It is written in plain, understandable language, and deals with the facts and fallacies, the theories and truths about this disease. It gives the signs and symptoms; what is to be done when evidence of the disease appears; why there is so much need of acting promptly in the matter; what is the chance of a fatal consequence of a surgical operation; what percentage of cures is possible in cancer in the various locations in which it commonly occurs; what advice medical men can give and what skill they can employ.

Dr. Childe was president of the British Medical Association in 1923. He is already well known as the author of an earlier book, called "The Control of a Scourge," published in 1906, the scourge being cancer. The author's purpose in each instance has been to get together helpful information and tell the public how to turn it to the greatest possible account. This and a determination not to let people be misled by the unfounded claims of those who have proprietary "cures" for cancer, and to correct the misconception among that large number who imagine that cancer is necessarily a hopeless disease from the beginning, are problems to which he has devoted a considerable amount of time.

The first book, or what Dr. Childe calls the first edition of his latest production, was issued in 1906. Consequently, it antedated by a number of years the educational campaign for the control of cancer which has been carried on in the United States along the same general lines.

"Cancer and the Public" gives attention to cancer in what are known as its accessible locations—the mouth and tongue, the lip, the skin, the breast, the uterus, and the rectum. He says that if all the information which is available to the medical profession were put into effect, and the public fully coöperated, the death rate from cancer, which is increasing in nearly every country to alarming proportions, could be reduced among men by one-third and among women by one-half.

There has been a revolution in the progress of knowledge and of practice with reference to the cure of cancer in the last generation which must be brought to public notice. This revolution has been so gradual that it has failed to be recognized by the public. Since there has been nothing sensational in regard to this advance, the public and, in fact, a part of the medical profession have become scarcely aware of it.

It is of considerable interest to note that what Dr. Childe in England is advocating is what the American Society for the Control of Cancer in America is doing. The doctrine preached on both sides of the Atlantic is the same. People must learn the danger signals of cancer and, when they think they recognize them, they must go to their medical advisors and submit to such treatment as may be necessary. And they must go immediately. Time is a great factor of importance with reference to the cure of cancer.

Much is to be said and much is said by the author upon the subject of prevention. The danger that irritating conditions in the mouth, upon the lip, in various parts of the skin and elsewhere may lead to cancer is clearly demonstrated, and a full account is given of the so-called precancerous conditions concerning which every one should be aware.

In a very interesting way, the author deals with the fads and fallacies of those persons who think they see in civilized life the cause or causes of cancer without being able to produce any real proof of the correctness of their suppositions. GEORGE A. SOPER

Child Hygiene—*By S. Josephine Baker, M.D., Dr.P.H. Harper's Public Health Series. New York and London: Harper & Brothers,* 1925. 534 pp. Price, $5.00.

All who are vitally interested in the health of the child naturally read what Josephine Baker writes on that subject. They will turn with special interest to the latest work from her pen.

Dr. Baker has brought together a wealth of material; cast it into logical sequence; and given us a very readable description of the origins, evolution and practical development of the various phases of child hygiene in the United States.

The book opens with a sketchy chapter on the history of child hygiene, the relation of the state and parents to the child and outstanding legislation bearing upon its health.

The chapters devoted to Administration, Vital Statistics, Records and Record Keeping, while not exhaustive, are well conceived and

present practical details. The succeeding chapters have to do with the health of the child in sequence of its age periods from prenatal life through school. Concluding chapters deal with the malnourished and nervous child and specify helpful "Aids in School Hygiene." The carefully prepared index will prove of great value to every reader. Full consideration is given in the Appendix to the Sheppard-Towner Act.

The book is about equally divided between the hygiene of maternity, infancy, preschool child and the health of the school child. Dr. Baker is direct and clear-cut in her treatment of maternity and infancy. There is no concealed meaning in her writing concerning the reprehensible maternal mortality in this country and the part which midwife and doctor share in it.

Dr. Baker is at her best in the chapters dealing with the child of school age. The material is well selected, decidedly well balanced, not cumbered with theories or unnecessary details and reflects throughout her practical mind.

With the large amount and diversity of data at Dr. Baker's command in over a quarter of a century one would have liked a more detailed and critical evaluation of the various efforts which have been put forth in the name of child hygiene. The records which must have passed daily over Dr. Baker's desk, if exhaustively studied and analyzed, would assist us materially in separating the chaff from the wheat. But perhaps one should not expect too much in one volume, especially a volume which is the only one in English presenting a full rounded conception of child hygiene in relation to the broader field of public health.

This book would make an excellent textbook for universities and colleges if printed in less expensive form and sold at a price within the limits of the pocketbook of the average student. For those actively engaged in any field of child hygiene it is indispensable as a reference book at any price. RICHARD A. BOLT

The Fruit of the Family Tree—*By Albert Edward Wiggam. Indianapolis: The Bobbs-Merrill Company,* 1924. 300 pp. Price, $3.00.

This book is a popular presentation of the known facts concerning heredity and the influence of environment, presented as an argument for eugenics, which is described as the basis of the new sociology, and as the application of human intelligence to human evolution.

It is interestingly written in the breezy and forcible style for which the author is noted. The facts are taken from standard authorities, and the conclusions seem justified. There can be little doubt that most of us know too little of, and take too little interest in, the subjects presented, which are of vital importance to all. We bespeak for the book a wide circulation among those who have not the time nor the scientific preparation to take up the more strictly scientific books. M. P. R.

Biology and Human Life—*By Benjamin C. Gruenberg. Formerly Head of the Biology Department in the Julia Richman High School. Boston and New York: Ginn & Company.* 592 pp. 1925.

It is seldom that one finds so much satisfactory information crowded into one book. A broad knowledge of biology and an intimate understanding of the needs of high school students have combined to produce a text which is unusually attractive from the standpoint of subject matter and of presentation.

The author has selected the rather limited title, "Biology and Human Life." It would seem that a more comprehensive term might be applied, for it is a biology of living relationships, a unified and applied biology. In view of the emphasis on health, it might well be called "Biology as Applied to Public and Personal Health."

The book has three divisions. Part one, called "Getting Acquainted with Life," gives chapters dealing with the scope of biology, the fundamental interrelationships between animals and plants, the evolutionary development of animal and plant life, and the general structure of living matter. Part two is "The Biology of Health." Here are considered such topics as the need and use of food, the source and choice of foods, the physiology of proper health habits, and the bacterial causes of disease and their control. Part three, "The Biology of Wealth," emphasizes the ecological and economic aspects of the subject, attention being given to those elements of wealth that are derived from an understanding of life or of living things.

Each chapter is preceded by questions representing the student's point of view and followed by a tabulated summary, questions representing the teacher's point of view, and a list of references.

The illustrations are numerous and unusually good. They include new and vivid diagrams and photographs.

It is a pleasure to be able to give such unreserved commendation to a book. Throughout, it shows marked originality in both arrangement and treatment. Good as a text on biology, it is equally good as a text on hygiene, and refreshingly free from the stereotyped formulæ which most of us seem unable to get away from. M. P. RAVENEL

Commercial Pasteurization, Bulletin No. 147, *U. S. Public Health Service, Government Printing Office, Washington, D. C.*, 1925. pp. 217. Price, 35 cents.

This *Bulletin* describing extensive experiments in the pasteurization of milk, states in its General Conclusions that the regulations "'milk or cream shall be heated to a temperature of at least 142° F. and held at such temperature for 30 minutes or more,' provides an adequate margin of safety, and is recommended as a proper standard for the definition of pasteurization by health authorities." The General Conclusions state further that to allow for fluctuations in operating conditions, "pasteurizing machines shall be regulated so as to maintain an average temperature of from 143° F. to 144° F. Such a standard allows a minimum margin of safety for 30 minutes of 4° F. and an average margin of from 5° F. to 6° F. above the thermal death point of 138° F. for the tubercle bacillus." These statements are of great importance if they are supported by adequate testimony in the experiments themselves. That there may be some doubt about this is indicated in another statement in the General Conclusions: "The bovine tubercle bacilli used were destroyed in some tests in three types of improved commercial pasteurizers at 138° F. for 30 minutes." It is unfortunate that this sentence which apparently sums up the authority for recommending 142° F. for 30 minutes contains the word "some," because it connotes that tubercle bacilli were not always killed at 138° F. Furthermore, the *minimum* margin of safety is the deciding factor of safety in milk pasteurization, and an *average* margin is without significance. The recommendation carries no statement with reference to the time taken to heat the milk or the "flashing" of the milk to a much higher temperature before the holding process at the stated temperature commences. Such factors have a great influence on the result of the rest of the pasteurizing process, and there is no apparent reason for omitting comment on them in the conclusions.

The experiments comprised investigations in three plants in New York City and in a plant at Endicott, N. Y., specially equipped for these studies. The experiments at Endicott included four series of tests (in April, 1922, August, 1922, February, 1923, and April, 1923) on milk inoculated with pathogenic bacteria, studies on cream volume and special engineering tests on flow type pasteurizers. Public health workers are chiefly concerned with the tests dealing with the destruction of the tubercle bacillus.

The first series of tests served chiefly to show the inadequacy for experimental work of the two types of equipment (a continuous flow system and a positive holder system) first installed for the tests.

The second series of tests led to the conclusions:

First: "That the flow type pasteurizer was inefficient in the destruction of the tubercle bacillus at the temperatures used," namely, 135° F., 142° F., and 145° F.

Second: "That the pocket type holder is effective for the destruction of tubercle bacillus at temperatures above 137° F., provided (1) that the dead end of discharge pipe can be eliminated and (2) that the rotary valve can be either eliminated or redesigned so as to be leak-proof."

Third: "That this machine (the vat type pasteurizer) under the conditions was not effective in destroying the tubercle bacillus."

It is important to note that in this series of tests the pocket type pasteurizer was not operated in the usual manner, but the milk was heated and run into the various pockets and held in each pocket at the different test temperatures 130° F., 133° F., 137° F., 142° F. and 145° F. Furthermore, in this machine so used the tubercle bacilli in milk inoculated with human and bovine strains were destroyed when the milk was heated to 147° F. and held for 20 minutes at 146° F.–144.5° F., but *survived* when the holding time was only 10 minutes at 146° F.–145° F. Similarly, the tubercle bacilli were destroyed in 30 minutes holding at 143.6° F. to 140° F. with previous heating to 144° F., but *survived* when the holding time was only 20 minutes at 143.6° F.–140.9° F. This indicates the relative effectiveness of different temperatures.

The third series of tests dealt only with cultures of typhoid bacillus.

Before undertaking the fourth series of tests, a number of changes were made in the experimental apparatus and these are the "three types of improved commercial pasteurizers" referred to in the General Conclusions. As it is the tests in this specially constructed apparatus which form the basis of the assumption that tubercle bacilli are destroyed at 138° F. for 30 minutes, it is desirable to examine these tests in some detail. Three types of apparatus were used in this series of tests: a flow type pasteurizer invented by Dr. W. H. Park, and having special baffles; an insulated glass lined tank with a separate heater—termed a pocket type pasteurizer with heater; and a jacketed glass lined tank—termed a vat type pasteurizer. These two latter, which were substituted *in toto* for the apparatus used in previous tests under the same designations, were new and different machines. Under scientific supervision the results obtained in these glass lined tanks differ but little, if any, from laboratory results.

Four operations were conducted with the flow type pasteurizer. The first, second and fourth operations were at temperatures above 138° F. In operation No. 3 "the milk was flashed momentarily to 160° F. It was then immediately reduced in the second heater to about 142° F. In the holders the temperature averaged about 139° F." The tests on samples of milk after the flash heating are reported as follows: "Four of the laboratories made such tests, and on all samples the results were negative, showing that the destruction of bovine tubercle bacilli was complete." The conclusions with regard to this test are: "The flow type pasteurizer operated by flashing to between 150° F. to 160° F. and immediately reducing to 138° F. showed negative results." *Since the destruction of bovine tubercle bacilli was complete after flashing the milk the subsequent holding at 138° F. is without significance.*

The pocket type pasteurizer was operated at three temperatures, the first two operations at temperatures above 142° F. In the third operation "the milk was heated to about 140° F. and held for 30 minutes at a temperature of 139° F." This milk gave negative results.

In the vat type pasteurizer, the milk is heated and held in the same vessel. Two operations were conducted, described as follows:

1. "The milk was heated to a temperature of 142° F. After reaching this temperature it was held for a period of 30 minutes with no loss of temperature due to first-class insulation."

2. The milk was heated to 138° F. and held for 30 minutes with no loss of heat.

Negative results are reported for both of these tests.

Thus far the testimony for the statement that bovine tubercle bacilli are killed at 138° F. for 30 minutes may be briefly summed up as follows:

The first series of tests give no evidence because of uncertainty of operation.

The second series of tests conclude that the flow type pasteurizer and the vat type pasteurizer were ineffective, but that the pocket type holder would be effective at temperatures above 137° F. if certain improvements were made in it.

The third series of tests did not include milk inoculated with tubercle bacilli.

In the fourth series of tests there is no evidence of the effect of the holding at 138° F. in the flow type pasteurizer since the bovine tubercle bacilli were destroyed by the previous flashing to 157° F.–160° F. In the glass lined tank, pocket type pasteurizer, operated at 139° F. with heating to 140° F. the bovine tubercle bacilli were destroyed. In the glass lined tank, vat type pasteurizer, tubercle bacilli were destroyed in 30 minutes at 138° F. This evidence is worth examining further.

With regard to the experiment on the glass lined tank, pocket type pasteurizer, we find from the tables on pages 103 and 215 that the three samples of milk giving negative results were actually treated as follows:

Sample 1 — heated to 138½° F., held at 139° F. for 30 minutes.
Sample 2 — heated to 140° F., held at 139° F. for 32 minutes.
Sample 3 — heated to 138½° F., held at 138° F. for 44 minutes.

A further examination of these tables also shows that it required 18 minutes to fill the tank with heated milk.

Since all of these samples which gave negative results were given a heat treatment in excess of 138° F. for 30 minutes, *the statement that bovine tubercle bacilli were destroyed at 138° F. for 30 minutes cannot be based on the evidence in this test.* The tests with the vat pasteurizer then remain for our consideration.

The findings with regard to the bovine tubercle bacilli in the tests on this pasteurizer are given in table 94 on page 212. This table shows that all three samples of treated milk gave negative results. It also shows, however, that it took 25 minutes to heat the milk to 138° F. from the temperature at which it

was supplied to this glass lined tank, and further that the first sample was held for 32 minutes, the second for 29 minutes, and the third for 30 minutes. We see then that these samples giving negative results were subjected to the action of heat for from 54 to 57 minutes. *There is therefore no evidence here either for the statement that bovine tubercle bacilli are killed at 138° F. for 30 minutes unless this statement is qualified with regard to the time of heating to this temperature.*

Referring back to the General Conclusions, especially that part which states that "bovine tubercle bacilli were destroyed in some tests in three types of improved commercial pasteurizers at 138° F. for 30 minutes," we find that *there were no tests conducted with live organisms at this temperature except in the case of two samples which gave negative results after heating for 25 minutes in the glass lined tank.*

In many commercial milk plants the time of heating milk is often 10 minutes or less. What effect the long time and slow heating used in the test has on increasing the lethal effectiveness of the holding time that followed is not stated in this *Bulletin*. Unless it can be stated that this factor has no effect, the lethal effectiveness of the holding time used in these tests must be considerably discounted as a matter of safety to the public health. The lethal heat treatment of milk-borne pathogens is a combination of time and temperature, the length of time being proportioned to the degree of temperature, and it may be, and no doubt is, that the method of applying the total heat treatment in this glass lined tank was more, perhaps much more effective in the destruction of pathogens, than if this raising of milk temperature were done rapidly, as in many commercial milk plants, necessitating a higher temperature or longer holding time or both, to destroy the tubercle bacillus.

An editorial note in this *Bulletin* states that "In publishing the following contribution the Public Health Service is not seeking to establish a standard definition of milk pasteurization nor to favor or discredit any particular type of pasteurizing apparatus." S. M. HEULINGS

CORRECTION

In the July JOURNAL, in the review of Dr. M. G. Seelig's book, "Medicine. An Historical Outline," on page 642, there was an error. That is, the discovery of phagocytosis attributed to Roux, should, of course, have been Metchnikoff.

HEALTH DEPARTMENT REPORTS

IRA V. HISCOCK

Alabama—The principal accomplishments of the State Board of Health of Alabama are described in the 1923 annual report by the State Health Officer. The plan of administration of the Alabama Board of Health includes the organization of health units in every county, each of these units to consist of a full-time health officer, one or more sanitary inspectors, one or more public health nurses and an office assistant. This report shows that there were during the year reported 22 full-time county health officers.

Some of the features of the work in this state include campaigns for the control of venereal disease, typhoid fever, and hookworm, and special activities in state-wide milk control. The International Health Board has conducted an investigation of the extent of soil pollution by hookworm in southern Alabama. Progress is also being made in the control of malaria which promises to be a great economical as well as health asset.

In his conclusion to a very interesting discussion of county organization, Dr. S. W. Welch, State Health Officer, calls attention to qualities and attributes considered essential for successful leadership in public health work on a county basis. "The primary requirement is native ability to deal with people, supplemented by a medical education and an understanding of the operations of law in human conduct, particularly with relation to rural psychology."

Chicago, Ill.—The weekly bulletin of the Chicago Department of Health for March 3, 1925, is devoted to a condensed report of this department for the year 1924. During the past year the department has been reorganized, having been divided into two principal sections, known respectively as the "medical" section and the "technical" section, each headed by an assistant commissioner of health, responsible directly to the Commissioner of Health. Each

section comprises four bureaus under the immediate supervision of a bureau chief, who reports to the assistant commissioner in charge of his section.

A crude death rate of 11.05 per 1,000 population from January 1 to December 19, 1924, as compared with 11.60 for the corresponding period of 1923 is noted. The year 1924 marks the lowest infant mortality rate the city has ever had—a rate of 76.9 per 1,000 births. The total attendance at infant welfare stations of 83,358 was an increase of 82 per cent over that of the previous year. In coöperation with the chairman of the health committee of the Woman's City Club, a survey of midwives of the city has been undertaken.

Progress is also noted in the work of the Bureau of Laboratories where approximately 300,000 examinations were performed, in addition to research studies of various health problems. The efficiency of the pasteurization of the milk supply was given special attention by the food inspection staff. No cases of contagious disease were found to have been caused by infected milk. It is stated that 1,100,000 quarts of milk are consumed daily in Chicago.

Another interesting step in coördination of activity has been the organization of a bureau of inspection service, the personnel of which comprises former quarantine officers, sanitary inspectors and food inspectors other than those assigned to technical meat and milk inspection. The city is divided into 100 districts, two to each ward, and each inspector handles the quarantine work and miscellaneous inspection in his district.

New Orleans, La.—The 1924 report of the Board of Health for the parish of Orleans and the city of New Orleans is bound in buff paper covers and contains 115 pages of text and statistical tables. The detailed organization of the Board of Health and the Health Department is set forth in the first two pages, followed by the report of the superintendent.

A classified financial statement shows a per capita expenditure for the year of 52 cents, including 4 cents for rat eradication and 4 cents for the isolation hospital. In addition to regular appropriations, receipts for the year included approximately 12 cents per capita from records, licenses and permits from the Vital Statistics Division, from inspections, fines and permits from the food and sanitary division, and from miscellaneous sources.

The year 1924 shows an increase in general death rate over that of the previous four years, the rate for white and colored combined being 18.4 (17.54 in 1923; 16.5 in 1922; 16.2 in 1921). This increase is not attributed to any outbreaks of acute communicable diseases, however. The largest single factor is stated to be the number of deaths from diseases of the heart, which accounted for 1,695 deaths, 654 of which were of colored persons.

Anti-plague work in New Orleans had progressed sufficiently in June, 1923, to enable the U. S. Public Health Service to turn over to the city the plague eradicative measures. From August 10, 1921, to June 29, 1923, over 200,000 rats had been trapped without finding any infected. On November 1, 1924, a case of bubonic plague was reported by the public health officials at the Marine Hospital. Plague infected rodents were found on the ship from which the case, a stowaway, had been taken, and also under the wharves. This necessitated immediate steps to determine the extent of infection, as well as control measures. It is stated that no case of human plague has occurred in the city since August, 1920, an indication of the results of vigilance.

An infant mortality rate of 77.6 per 1,000 births, 60.5 for white and 115.6 for colored persons, compares favorably with the figures of other cities of this size. Other factors of note in the report include the announcement of a new milk ordinance, prepared in coöperation with a representative of the U. S. Public Health Service, and the results of an extensive mosquito survey by the department entomologist.

Colorado Springs, Colo.—The value of a few carefully selected illustrations is demonstrated in the 1924 report of the Department of Public Health and Sanitation of Colorado Springs. Attractive views of sections of country surrounding this city, and a brief discussion of the functions of the health department and of its relation to various organizations and groups of people in the community are particularly good features of the report.

It is pointed out that for success, coöperation must exist with all groups or organizations concerned in the accomplishments of the department. These include the people, newspaper men, members of the medical profession, and all departments and branches of city government. Without the aid of the press, it is

not possible to advise the people of existing conditions and of actions considered desirable. The important services performed by physicians in the reporting of contagious diseases and other conditions affecting the health of the people, as well as in giving advice on special subjects, is noted. The close relationship of city and county health problems is also indicated.

From detailed statistical tables following the text it is learned that this city of 36,000 population had a crude death rate in 1924 of 15.9, with an infant mortality rate of 64. It is interesting to note that of the 153 deaths from tuberculosis recorded, 54 were stated to have been non-resident. The health department expenditure for the year was 72 cents per capita.

Kansas City, Kans.—The first published report of the Kansas City, Kansas, health department deserves creditable mention in this column. The outstanding facts concerning the 1924 experience are briefly set forth, and the text is well illustrated by statistical tables and graphs which include comparative data for previous years. Photographs of the mayor and city commissioners are also features. A list of health department personnel precedes the health commissioner's letter of transmissal, while a classified statement of expenditures concludes the report.

One of the lowest general death rates for the city is recorded for 1924—12.2 per 1,000 population. It is calculated by the health commissioner that if the average death rate for the three years 1910–1912 had obtained during 1924, there would have been 555 more deaths than actually occurred in 1924. The death rate from tuberculosis (all forms) of 96.9 per 100,000 population is the lowest recorded for this city. The opening of a new hospital for communicable diseases, with 24 beds on one floor for advanced tuberculosis, provides the first opportunity, according to the report, for caring for advanced open cases and thus protecting contacts. Twenty-six beds are provided for acute communicable diseases. An infant mortality rate of 75 deaths per 1,000 births marks a drop from 97 in 1923.

Collection of garbage in Kansas City is under the superintendent of sanitation, with disposal by feeding to hogs.

Among the important events in the history of the health department is mentioned a health survey made by Dr. W. S. Rankin of the A.P.H.A. and Dr. J. W. Mountain of the U.S.P.H.S., which "helped very materially in informing the medical profession and the public as to our strong points as well as our weak ones; and it has made it possible for us to make certain improvements because of increased public interest."

BOOKS RECEIVED

Books received during June are listed here. Many of these will be reviewed.

THE SCIENCE OF BIOLOGY. By George G. Scott, Ph.D. New York: Crowell, 1925. Pp. 630. Price, $3.50.

PRINCIPLES OF PUBLIC HEALTH ENGINEERING. By Earle B. Phelps, B.S. New York: Macmillan, 1925. Pp. 265. Price, $3.00.

SOCIAL ASPECTS OF MENTAL HYGIENE. Addresses by Frankwood E. Williams, G. Macfie Campbell, Abraham Myerson, Arnold Gesell, Walter E. Fernald, Jessie Taft. New Haven: Yale University Press, 1925. Pp. 150. Price, $1.60.

EVERYDAY MOUTH HYGIENE. (Second Ed.) By Joseph Head, M.D., D.D.S. Philadelphia: Saunders, 1925. Pp. 67. Price, $1.00.

SIMPLIFIED NURSING. By Florence Dakin, R.N. Philadelphia: Lippincott, 1925. Pp. 497. Price, $3.00.

AMERICANITIS—BLOOD PRESSURE AND NERVES. By William S. Sadler, M.D., F.A.C.S. New York: Macmillan, 1925. Pp. 176. Price, $2.00.

THE NEWER KNOWLEDGE OF NUTRITION. (Third Ed., rev. and rewritten.) By E. V. McCollum, Ph.D., Sc.D., and Nina Simmons, Sc.D. New York: Macmillan, 1925. Pp. 675. Price, $4.25.

MENTAL DISORDER AND THE CRIMINAL LAW. By S. Sheldon Glueck, L.M., Ph.D. Boston: Little, Brown, 1925. Pp. 693. Price, $7.00.

THE BACTERIOLOGY OF FOOD. By Cuthbert Clark. London: H. K. Lewis & Co., 1925. Pp. 180. Price, 7/6 net.

LA PROTECTION SOCIALE DE LA SANTE. By G. Ichok. Paris: Librairie Marcel Riviere, 1925. Pp. 420. Price, 20 francs.

CANCER AND THE PUBLIC. By Charles P. Childe, B.A., F.R.C.S., M.R.C.P.E. New York: Dutton, 1925. Pp. 267. Price, $4.25.

FOOD POISONING: A Study of 100 Recent Outbreaks. Report of the Medical Research Council. By Wm. G. Savage, M.D., B.Sc., and P. Bruce White, B.Sc. New York: British Library of Information, 1925. Pp. 109. Price, 80 cents.

HEALTH SPEAKER'S HANDBOOK. Revised Edition. By Iago Galdston, M.D. New York: National Tuberculosis Association, 1925. Pp. 80. Price, 50 cents.

AN APPROACH TO SOCIAL MEDICINE. By Francis Lee Dunham, M.D. Baltimore: William & Wilkins, 1925. Pp. 242. Price, $4.00.

DIABETES AND ITS TREATMENT BY INSULIN AND DIET. Second Edition. By Petty and Stoner. Philadelphia: Davis, 1925. Pp. 133. Price, $1.50.

BACTERIOLOGY. A Text Book on Fundamentals. By Stanley Thomas. New York: McGraw-Hill, 1925. Pp. 201. Price, $2.50.

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY

BALFOUR, ANDREW, and SCOTT, HENRY HAROLD. Influenza. *World's Health*, 6:181 (May), 1925.

Discussion of the cause, common symptoms, methods of control and treatment. Mention of some notable pandemics.

BRANDER, WILLIAM. The Relationship of Mania to Puerperal Infections. *Med. Off.*, 33:265 (June 13), 1925.

Study of many patients confirms the influence of hereditary tendencies and also concludes "that infections are responsible for a greater number of cases of mania during the puerperium than has hitherto been suspected."

BREW, JAMES D. The Grading of Milk. *Pub. Health News* (N. J.), 10:156 (May-June), 1925.

Satisfactory control and improvement in milk supplies can be secured by enforcing ordinances; better defining classes of milk; standardizing the demands made upon producers and dealers; and by education.

CHAMOT, E. M., and GEORGIA, F. R. Hydrogen-Ion Concentration and Peptones Used in Bacteriology. *J. Am. Water Works Assn.*, 13:661 (June), 1925.

Experimental studies of various peptones used in the bacteriological examination of water showed "Witte" peptone best suited for adjustment of the reaction by titration with phenolphthalein and gave the best results for growing B. coli. Armour's, "Witte," and "Proteose" peptones only ones found suitable in determination of indol production.

CONNOLLY, JOEL I., and GORMAN, A. E. The Supplying of Drinking Water to Vessels in the United States. *Pub. Health Rep.*, 40:1042 (May 22), 1925.

Discussion of water supplies obtained from ashore and overboard, and treatment methods. Sanitary control of drinking water on vessels has decreased typhoid fever rate.

DALZELL, A. G. Points in the Design and Construction of Pipe Sewers. *Eng. News-Rec.*, 95:20 (July 2), 1925.

Improved methods urged to meet changing conditions. Examples of Canadian and Washington practice and suggested modifications.

DEPORTE, J. V. Inter-Racial Variations in Infant Mortality. *Am. J. Hyg.*, 5:454 (July), 1925.

An examination of "the basic circumstances pertaining to infant mortality in general, its movement, the sources of differences in infant death rates, and the association between these rates and the fertility of the diverse racial groups in the United States." Illustrated by tables and charts.

DOULL, JAMES A., and LARA, HILARIO. The Epidemiological Importance of Diphtheria Carriers. *Am. J. Hyg.*, 5:508 (July), 1925.

A comparison of the frequency of clinical infection among the family contacts of diphtheria cases and of known bacillus carriers. The risk of diphtheria in carriers' families compared with that in the general population of Baltimore.

ELIOT, MARTHA M. Sun Light for Babies. *Child Health Bull.*, 1:35 (June), 1925.

Brief discussion of beneficial effects of sunlight and rules for giving babies sun baths.

FERRY, N. S.; PRYER, R. W., and FISHER, L. W. The Preparation and Clinical Tests of an Antistreptococcus (Scarlatinæ Serum). *J. Lab. & Clin. Med.*, 10:753 (June), 1925.

Preliminary report of results from the use of a streptococcus scarlatinae antiserum prepared in such a way as to endow it with both antibacterial and antitoxic properties.

FRAZER, W. M. Propaganda as a Necessary Adjunct to Public Health Work. *National Health* (London), 17:411 (June), 1925.

Health services cannot reach their height of usefulness to a community unless they are continually brought to the attention of the public.

FRONCZAK, FRANCIS E. Some Observations on Goitre. *J. Am. Assn. Promoting Hyg. & Pub. Baths*, 7:24, 1925.

Discussion of the distribution, cause and prevention of goiter. Kelp a desirable amendment to the diet in preventing the disease.

HATHAWAY, WINIFRED. Teachers May Conserve the Eyesight of School Children. *School Life*, 10:195 (June), 1925.

Eye-strain causes serious physical difficulties, and teachers should know the common symptoms. High standards of illumination should be maintained, and often deficiencies in equipment can be overcome by watchfulness.

HINMAN, JACK J. Safeguarding Health of Bathers in Swimming Pools. *Red Cross Courier*, 4:10 (June 1), 1925.

Suggestions for keeping the pool and bathers clean to eliminate dangers of infection.

HOOD, WALTER S. Safeguarding the Nation's Health with Municipal Outdoor Swimming Pools. *J. Am. Assn. Promoting Hyg. & Pub Baths*, 7:50, 1925.

Public beaches are inadequate and municipal pools should be built as a community enterprise to provide relief and recreation.

KNOWLES, MORRIS, and FULKMAN, JOHN A. Metropolitan Water Supply Systems. *J. Am. Water Works Assn.*, 13:601 (June), 1925.

Discussion of the need of community cooperation, apportionment of cost, and advantages of such systems. Examples of securing centralized control.

LAWSON, GEORGE B.; JACKSON, W. P., and CATTANACH, GEORGE S. Arsenic Poisoning: Report of Twenty-eight Cases. *Jour. A. M. A.*, 85:24 (July 4), 1925.

Severe attack of poisoning traced to cider which had been stored in a barrel that formerly contained arsenic. Symptoms and treatment described.

LE PRINCE, J. A. Progress in Malaria Control. *Nation's Health*, 7:399 (June 15), 1925.
Dissemination of information about anopheles and means for their destruction is the greatest factor in the campaign against malaria, particularly in rural districts.

LUMSDEN, L. L. An Outbreak of Typhoid Fever Caused by Milk-Borne Infection. *Pub. Health Rep.*, 40:1302 (June 19). 1925.
At least 100 students of Lincoln Memorial University at Harrogate, Tennessee, contracted typhoid fever from the milk obtained from a farm in the vicinity.

MATHIESON, D. MORLEY. Assurance Companies and the Public Health. *Pub. Health* (London), 38:269 (June), 1925.
Insurance companies should be fundamentally concerned with the improvement of health and prolongation of life and should be vitally interested in seeing public health securely established and properly supported.

MCCORD, CAREY P. How to Avoid Lead Poisoning. *Hygeia*, 3:387 (July), 1925.
Some hazards in working with lead, how it gets into the body, and how to detect the presence of lead poisoning.

MENDELSOHN, ISADOR W. Canyon Automobile Camp, Yellowstone National Park. *Pub. Health Rep.*, 40:1248 (June 12), 1925.
Description of the water supply, sewerage system, garbage and refuse disposal, mosquito-control measures, service facilities and camp management.

MUNRO, DAVID. The Influence of Aerial Transport on Epidemiology. *Pub. Health* (London), 38:271 (June), 1925.
The possibilities in increasing the rapidity of spread of infection and of introducing *de novo* diseases into countries.

NANKIVELL, A. T., and KETTLEWELL, G. D. An Outbreak of 308 Cases of Food Poisoning at Greenbank Infirmary and Workhouse, Plymouth. *Med. Off.*, 33:255 (June 6), 1925.
Outbreak of gastro-enteritis traced to the chief cook who was ill at the time.

PEMPHIGUS NEONATORUM. *Med. Off.*, 33:268 (June 13), 1925.
Memorandum issued by the Ministry of Health because of recent outbreaks of the disease in maternity homes, calling attention to its character, mode of infection and spread, treatment and prevention.

PFAHLER, GEORGE E. The Prevention and Abortion of Boils and Carbuncles. *Atlantic M. J.*, 28:586 (June), 1925.
Recommendations to those who are subject to boils, including a low carbohydrate diet table.

PROGRESS IN STUDY OF EDUCATION OF ENGINEERS. *Eng. News-Rec.*, 95:14 (July 2), 1925.
Report of investigations of the Society for the Promotion of Engineering Education giving results of studies of graduates and of European schools.

ROBERTSON, ALEX. F. An Institutional Outbreak of Scarlet Fever. *Jour. A. M. A.*, 84:1801 (June 13), 1925.
Skin test for susceptibility was made on both patients and employés. Such a test is of value in managing an institution outbreak.

ROESLE, E. The Mortality in Germany, 1913-1921. *J. Am. Stat. Assn.*, 20:163 (June), 1925.
A discussion of mortality by sex and age groups, showing the effects of war upon mortality and the selective effects of famine. Charts and tables illustrate.

SAVAGE, WILLIAM G. The Milk Supply and Its Improvement. I. Essentials of the Present Position. *Lancet*, 208:1095 (May 23), 1925.
The per capita consumption of milk in England is low and will not be increased without the support of the medical profession who realize the unsatisfactory quality of the present supply.

SMITH, ERWIN F. Some Newer Aspects of Cancer Research. *Science*, 61:595 (June 12), 1925.
Brief discussion of the later researches in diagnosis, treatment, biology and etiology.

SUDHOFF, KARL. Epidemiological Rules of the Past. *Jour. A. M. A.*, 84:1945 (June 20), 1925.
Interesting account of rules to combat leprosy, typhus fever and plague. Stoppage of epidemic diseases is, in great part, an achievement of the Middle Ages.

TAYLOR, MERVYN ROSS. The Advantages and Extent of Health Supervision in Industry. *Labor and Industry* (Pa.), 12:5 (May), 1925.
Discussion of medical and dental supervision and periodic sanitary surveys in industrial plants. Illustrations of blanks used in connection with medical service.

VAN NUYS, FRESENIUS. Deficiency Diseases. *Boston M. & S. J.*, 192:1242 (June 25), 1925.
Review of the new discoveries in nutrition, with particular reference to the foods which prevent the various deficiency diseases.

WEBSTER, A., and HILL, LEONARD. The Causation and Prevention of Rickets. *Brit. M. J.*, No. 3360:956 (May 23), 1925.
A brief review of the theories that have been advanced to explain the cause of rickets. Discussion of experiments conducted to determine preventive measures.

WICKES, G. L. Report of a Case of Scarlet Fever of Unusual Etiological Interest. *U. S. Nav. Med. Bull.*, 32:696 (June), 1925.
Infection of scarlet fever introduced into vaccination lesion. Patient's hands thought to have carried the infection.

WINSLOW, C.-E. A. Tuberculosis in Dusty Trades. *Survey*, 54:353 (June 15), 1925.
"I am familiar with no single factor . . . which shows so clear and so striking a statistical relation to the tuberculosis death rate as exposure to the inhalation of siliceous dusts."

WOLFE, KATHARINE H. K. The Teacher's Health. *J. National Ed. Assn.*, 14:159 (May), 1925.
Helpful suggestions to stimulate teachers to practice a full health program. Periodic physical examination of teachers a necessary part of the program.

YAOI, HIDETAKE. On the Influence of Acids Upon the Viability of Bacteria. *J. Lab. & Clin. Med.*, 10:735 (June), 1925.
Experiments conducted with B. coli and peptone ("Witte") media. Many acids found to retard or accelerate bacterial growth.

LABORATORY

C. C. YOUNG *

Viability of B. Typhosus in Stored Shell Oysters—The author reports on an investigation of the viability of B. typhosus in stored shell oysters. Oysters were aroused from hibernation, fed with B. typhosus and then stored. B. typhosus was being recovered 15 days after the oysters had been fed with the organism, when the tests were discontinued. A bibliography is included.—Kinyoun, *Pub. Health Rep.*, 40:819 (April 24), 1925. C. C. Y.

The Viability of Typhoid Bacilli in Shell Oysters—Shell oysters artificially contaminated with typhoid bacilli by floating for one hour in sea water to which typhoid bacilli had been added and then placed at ice box temperature (from 5° to 8° C.) were found to contain living typhoid bacilli for as long as twenty-four days. There was no evidence of multiplication, and after the first few days a diminution in numbers was plainly apparent. Of the three strains used, one was found to survive to the twenty-first day, one to the twenty-second and one to the twenty-fourth.—E. O. Jordan, *Jour. A. M. A.*, 84:1403 (May 9), 1925. Author's summary.

Viability of Bacillus Typhosus in Oysters During Storage—The longevity of B. typhosus in the oyster juice of both shucked and shell oysters in storage varies with the temperature at which they are kept. In general, the temperature best suited for the preservation of the oyster tends to prolong the life of typhoid bacilli in the oysters. Under conditions simulating those of the trade, viz., at icing temperature (45° F.), typhoid bacilli survived for twenty-two days in shucked oysters and for sixty days in shell oysters. No evidence of bactericidal power or eliminative action against B. typhosus was observed in living shell oysters during dry storage at 45° F. The microörganisms survive for a longer period than the oysters.—Tonney and White, *Jour. A. M. A.*, 84:1403 (May 9), 1925. Author's conclusions.

Typhoid Empyema, with Report of a Case—Authors' summary: From the bacteriological standpoint, the question arises whether pneumonia in this patient was due to the pneumococcus or to the typhoid bacillus, or to a mixed infection of the two organisms. It is a question which cannot be fully decided by the data at hand. The sputum submitted for pneumococcus grouping was composed of slightly tenacious mucus, yellow in color, small portions of rusty material, mixed with saliva. The routine examination of the direct smear showed only a few lanceolated diplococci and a very few Gram-positive bacilli; but no Gram-negative bacilli were found. Culture of the selected clumps of this specimen in Avery's medium yielded several forms of organisms, including Gram-positive oval cocci in medium to long chains, Gram-positive cocci in clusters, and a few Gram-positive bacilli; again no Gram-negative bacilli were observed. The bile test showed a fair lysis, only relatively few pneumococci were present, these were found to belong to type IV by the usual specific precipitin tests. It is difficult to exclude the saliva as the source of the pneumococcus in this case, since that organism commonly occurs in the mouth. Possibly the fluid which was obtained in the last exploratory puncture of the chest came from the lung tissue proper in the affected portions. It yielded B. typhosus on culture, but no pneumococcus, although the latter organism might have been eliminated from the involved lobe at that stage of the healing process. On the other hand, in passing the exploratory needle to the lung, a previously infected pleura had to be passed, and might infect any materials which came from the lung tissue. Neither of the cultures of the pus from the pleural sac yielded the pneumococcus,

* Each month we desire to publish in the LABORATORY NOTES short, original articles, under the author's name, dealing with some phase of applied bacteriology, labor saving devices, modified methods, etc. Contributions should be in the hands of associate editor before the fifteenth of each month.—C. C. YOUNG, State Department of Health, Lansing, Mich.

which is in favor of a typhoid infection of the lung.—Amill and Famulener, Reprint, *Proc. New York Path. Society*, Vol. 23, Nos. 6–8 (October-December), 1923.

Paratyphoid **Enteritidis Group**—The author concludes that host specialization occurs to a considerable extent in man (B. paratyphosus A), the horse (B. abortivo-equinus) and the pig (B. suipestifer). Less definite or less advanced is the relationship of B. paratyphosus B, Aertrycke type, to rodents; this organism is found not only in rodent diseases, but also in bovine and ovine infections; it may possibly also sometimes occur in swine. In human paratyphoid fever, B. paratyphosus B, Schottmuller type, has been reported almost if not quite as frequently as B. paratyphosus A, but unlike the latter it has been found also in swine. The most cosmopolitan member of the group is apparently B. enteritidis, which is found not infrequently in human, porcine, bovine and rodent infections.—E. O. Jordan, *J. Infect. Dis.*, 36:309 (March), 1925.

Paratyphoid **Agglutinins in Specimens** Submitted for **Typhoid Agglutination Test**—Based on a study of 13,644 specimens which were tested for typhoid and paratyphoid agglutinins, the authors find that the occurrence of paratyphoid agglutinins in cases in which paratyphoid fever is not specifically suspected is so rare (1 in 1,000 positive agglutination; 7 in 1,000 partial agglutination) as to make such examination unnecessary. If paratyphoid fever is suspected, however, paratyphoid tests cannot be omitted; of 604 such specimens, 2.0 per cent gave complete agglutination, and 5.3 per cent partial agglutination.—Gilbert and Groesbeck, *J. Lab. & Clin. Med.*, 10:282 (Jan.), 1925. M. S. M.

The **Standardization of Anti-Dysentery** (Shiga) **Serum. II**—The author concludes that the antitoxic values of anti-dysentery (Shiga) serum can be determined with a reasonable degree of accuracy by the well-known mouse intravenous method. It is possible with a limited number of mice to distinguish between sera differing in strength by about 20 per cent. There is a wide variation in antitoxic strength between the strongest and weakest antitoxic sera used in clinical work in different parts of the world.—O'Brien and Runge, *Brit. J. Exper. Path.*, 6:84 (April), 1925.

The Determination of Dissolved Oxygen by the Winkler Method—A discussion of the Winkler method and various modifications of the same. The original method was recommended in the absence of organic matter, nitrites and iron salts. To assure complete absorption of the dissolved oxygen it is desirable, after the precipitated manganese hydroxides have partially settled, to mix again and allow the precipitate to settle a second time. In the presence of the before-mentioned substances the Rideal-Stewart permanganate modification as given in the *Standard Methods of Water Analysis*, A.P.H.A., 1923, is recommended, with the exception that decolorization of the permanganate is accomplished by a trial addition of 0.5 c.c. of oxalate solution. If this is not sufficient an additional 0.5 c.c. is added. An excess of oxalate will give low results by acting upon the manganese hydroxides. Complete decolorization must be accomplished, however, as the presence of the permanganate will give high results. Prompt mixing of the reagents after final acidification will do away with much of the effect of an excess of oxalate. In the presence of iron salts the permanganate modification must be used along with the following precautions: (1) Decolorizing in the dark. (2) The samples should be completely decolorized (decolorization is hastened by the addition of 2 c.c. of 40 per cent KF $2H_2O$ after the addition of the permanganate). (3) the titration should be performed immediately after the final acidification. Four c.c. of 85 per cent H_3PO_4 should be substituted for sulphuric acid if the titrations are to be delayed.—E. J. Theriault, *Pub. Health Bull.*, No. 151, 1925. E. F. E.

Echinococcus Cyst of the Kidney—The review of the literature shows that of the 17 cases occurring in this country, a correct diagnosis was made before operation in only four, by the history of the patient voiding small cysts. Of the remaining thirteen cases, in six the diagnosis was tumor of the kidney, the true nature of which was revealed at operation. In two, the enlargement of the kidney was discovered by palpation during laparotomy for some abdominal condition and later verified by a kidney operation. In five cases the diagnosis was established at necropsy, no operation having been performed. The author concludes that echinococcus cyst of the kidney occurs in from 1 to 3 per cent of all cases of hydatid disease and that the diagnosis would be made

more often if the possibility of this condition was kept in mind and the urine searched carefully for hooklets.—Melew, *Jour. A. M. A.*, 84:1725 (June 6), 1925. C. C. Y.

Sugar Threshold in One Hundred Cases of Diabetes—That the threshold point of glycuresis in diabetes shows wide variations is an important fact, clinically, because it reveals the inadequacy of urinary sugar examinations and the necessity for blood sugar findings in the management of this disease. Marked variations in the blood sugar level at which glycosuria occurs are observed in groups of patients, and even in the same patient the sugar threshold often manifests striking changes. The sugar threshold in 100 cases of diabetes was determined, which showed beginning sugar excretion levels ranging from 80 to 310 mg. of blood sugar. Coexistence of nephritis with diabetes is apparently the cause of the very high sugar thresholds found. These facts show the importance of blood sugar findings and the insufficiency of urinary sugar examinations in diabetes.—Roe and Irish, *Jour. A. M. A.*, 84:1406 (May 9), 1925. O. M. M.

Hemoglobin and Methemoglobin. I—The pneumococcus is capable of oxidizing hemoglobin to methemoglobin and of reducing the latter to hemoglobin again. Both the living organism and sterile extracts will accomplish the changes; the like systems seem to be involved in them. The type of reaction induced is determined by the presence or absence of molecular oxygen. The oxidation and reduction of the blood pigments are reversible processes. The equilibrium between hemoglobin and methemoglobin in a mixture of blood and pneumococcus cellular substances may be shifted in either direction at will by regulation of the oxygen tension. In the present paper quantitative evidence is presented of the reduction of methemoglobin to hemoglobin by sterile animal tissues. The possible relations of this activity to the disappearance of methemoglobin from the blood stream of the living animal are discussed. The author includes a bibliography of 93 references—Neill, *J. Exper. Med.*, 41:299 (Feb.), 1925. M. S. M.

Pure Culture of Virulent Pneumococcus—A careful study has been made of the composite nature of pure cultures of pneumococci. By various manipulations it is shown that a pure culture of these organisms is composed of individuals differing in virulence and in other characteristics—Amoss, *J. Exper. Med.*, 41:649 (May), 1925. M. S. M.

VITAL STATISTICS

LOUIS I. DUBLIN, PH.D.

French Vital Statistics, 1924—The birth rate in France declined from 19.4 per 1,000 population in 1923, to 19.2 in 1924 and the death rate rose from 17.0 in 1923, to 17.3 in 1924. The excess of births over deaths fell from 94,871 in 1923 to 72,216, but this was an improvement on the 70,579 in 1922. The population is estimated at 39,209,518.—*Science*, 61:488–489 (May 8), 1925.

Diphtheria Mortality in the Large Cities of the United States in 1924—The mortality from diphtheria in the cities of the United States with a population of over 100,000 made a very favorable showing in 1924 as compared with the averages for earlier years. The 11 cities in the New England States were particularly fortunate, 8 of the number having a lower rate than the preceding 4-year average, and 5 having rates under 10. Worcester seems to have had an epidemic and Boston and Springfield also showed increases. New Haven registered the lowest diphtheria rate of any northern city and is excelled among all the cities only by Nashville, which has a large negro population. The 12 cities in the Middle Atlantic States also had a good diphtheria year, all but 3 showing a decrease as compared with the preceding 4-year average. No city in this group had a rate above 20. The 6 cities in the South Atlantic States keep up the good record, Norfolk having a rate of 1.7.

The cities in the East North Central States make an impressive showing, only Dayton failing to show a decline from the 4-year average. The 4 cities in the East South Central States include 2 of the 5 cities with rates under 2, Nashville and Louisville. The cities in the West North Central and West South Central had a relatively good diphtheria year. In contrast, however, to almost all other sections of the country, the cities in the Mountain and Pacific States continue to have an excessive diphtheria mortality. Evidently the epidemic wave which has affected this region since about 1920 has not yet spent its force. In every city but one the 1920–1924 average is considerably higher than the 1915–1919 average, in several instances more than double.

The general outlook at the present time is highly encouraging. In 1924, only 5 cities had a diphtheria mortality rate greater than 20, as contrasted with 17 in the preceding 4-year average, and 37 had rates less than 10 as compared with 16 in 1920–1923. Fourteen cities, indeed, had rates under 5, while none averaged so low in 1920–1923.—*Jour. A. M. A.*, 84:1269–1271 (April 25), 1925.

Switzerland's Cancer Death Rate—During the period 1900–1920 the death rate for cancer in Switzerland has remained almost stationary, hovering around 12.1 per 100,000. It should be remembered that at the present time the means of cancer diagnosis are so much improved that many cases are now recognized that formerly would doubtless have been confounded with other affections. The mortality rate from cancer might therefore be expected to have increased to a considerable extent, but this has not proved so. Patients with cancer in Switzerland are now dying at a later age than formerly. Although the cancer mortality from the population as a whole has remained stationary, for the age groups under 69 the death rate has diminished, while the proportion of deaths from cancer above the age of 69 has increased.

There is a surprisingly high percentage of deaths due to cancer of the digestive tract, the rate for 1900–1920 being 84 per 100,000 and constituting 75 per cent of the mortality from cancer. The mortality from neoplasms of the digestive tract shows only very slight variations from year to year and is not increasing. Cancers of the breast have increased, however. This form of cancer together with that of the uterus represents 27 per cent of the cancer mortality in the female sex. Cancers of the breast have increased from 12.7 per 100,000 in 1900–1905 to 17.0 in 1915–1920, but cancer of the uterus has remained stationary at about 17.4.—*Jour. A. M. A.*, 84:1434 (May 9), 1925.

Vital Statistics in Czechoslovakia—The birth rate in 1923 for Czechoslovakia was 27.26 as compared with 29.02 in 1921. The post-war death rate was highest in 1920 (18.06), falling to 15.01 in 1923. Bohemia's birth rate, which was 17.74 in 1919, rose to 23.94 in 1921 but declined to 22.47 in 1923. The general death rate of 17.72 in 1919 fell to 13.87 in 1923. Moravia shows almost the same figures for the death rate but the figures for the birth rate are higher, in 1923 being 25.17. The same situation is seen in Silesia, the 1923 birth rate, however, being even higher (28.49). In Slovakia the birth rate is high, attaining 38.22 in 1921 and declining slowly to 36.02 in 1923. The death rate is also high and the peak was reached in 1921 with a rate of 21.31. With the declining birth rate, the death rate also fell, reaching 17.59 in 1923. The highest birth rate in Carpathian Russia was 46.68 in 1922, the 1923 rate being 43.44. The peak of the death rate was 32.07 in 1920 with a steady decline to 20.54 in 1923.—*Jour. A. M. A.*, 84:1438 (May 9), 1925.

Public Health in Hong Kong, 1923—The civil population of Hong Kong in 1923 was estimated at 597,300 of which 15,500 were British and foreign civilians, the remainder being Chinese. The birth rate for foreign civilians is said to be 7.39 per 1,000 and that of the Chinese 6.93, but it is impossible to know what the correct Chinese birth rate is. The civilian death rate was 25.98, for Chinese 26.27 and for non-Chinese 14.83. The infant mortality of the non-Chinese was 81. The chief diseases treated at the three principal hospitals were beri-beri, malaria, pulmonary tuberculosis and syphilis.—*Lancet*, 1:801 (April 11), 1925.

Infant Mortality in Argentina—The birth rate in Argentina remains very high in the rural districts, about 50 per 1,000; but in some of the chief cities, Buenos Aires, La Plata and Rosario, there has been a rapid and progressive fall, so that in 1921 the figure stands at 25 per 1,000. The high birth rate is accompanied here as elsewhere by a high death rate, but it is disconcerting to learn that in certain provinces (Tucuman, Salta and Jujuy) the deaths actually exceed the births. The general

mortality of the republic was 18 to 1919 but in Cordoba, San Juan, Mendoza and Tucuman the rate was about 40. The infant mortality is everywhere high. About 30 per cent of deaths in the republic occur in infants under 2 years of age. The causes of this heavy infant mortality are the ignorance of the mothers, use of artificial foods, prevalence of bottle feeding, hot summers, poor housing and lack of doctors and nurses.—Mamerto Acuna, *La Nipiologia*, April–Sept., 1924; ab. *Eugenics Rev.*, 17:61 (April), 1925.

Studies on the Respiratory Organs in Health and Disease—XIX. The Significance of Serial Vital Capacity Readings in the Guidance of Diagnosis and Treatment of Certain Diseases of the Chest—Observations on several thousand persons have proved that theoretical normal vital capacity standards are fairly satisfactorily worked out but, on account of individual variations like theoretical normal weight standards, they can never be highly satisfactory. The normal standards which to date have proved most satisfactory are those based on surface area of the body or standing height, the latter being less accurate.

Cases are cited to show that the vital capacity test is of tremendous value both in diagnosis and the guidance of treatment when serial readings are made, and particularly when at least one of these readings was taken at a time when the patient was in good health.

The vital capacity test is recommended strongly as a routine procedure in every physical examination.—J. A. Myers, *Am. Rev. Tuberc.*, 11:64–70 (March), 1925.

Statistics for Surinam (Dutch Guiana)—Surinam is on the northeast coast of South America. Although the area is 4 times as large as that of Holland, the country is very little populated, great sections of the interior being unknown. Besides the capital, Paramaribo, where nearly half of the population is found, there are but two or three villages along the coast. There are estimated to be 9,000 Bush-negroes and 1,500 Red-Indians in the interior. The census of 1921 showed that there are 107,723 people (excluding the Bush-negroes and the Red-Indians). About 0.6 per cent of the population is European.

Malaria is prevalent over the whole country and is a constant danger. Typhoid fever, dysentery, filarial fevers, leprosy and ankylostomiasis are also present. The death rate in 1922 was 19.1 for the whole country and 27.7 in Paramaribo; the birth rate 30.0 for Surinam and 29.7 for Paramaribo, and the infant mortality rate 102 for Surinam and 120 for Paramaribo.—J. W. Wolff, *Metron*, 4:371–377 (Dec.), 1924.

Health in the Canary Islands, 1924—During 1924, 1,551 deaths from all causes were reported at Las Palmas, Canary Islands. The population was 66,460 in 1920. Three cases of plague were reported during the year with no deaths. The cases occurred in persons vaccinated against plague. Sanitary conditions are not good. Only few houses are connected with the recently commenced sewers.

Puerto de la Luz, the principal harbor of the east Canary Islands is the only place in the islands which is said to be plague infected. This port is in close contact with the plague infected ports of West Africa.—*Pub. Health Rep.*, 40:748–749 (April 10), 1925.

Incidence of Tuberculous Infection in China—Vital statistics are not scientifically kept in China. In Hong Kong where an attempt is honestly made to record mortality statistics, in 1922 with a Chinese population of 662,000 there were 2,063 deaths from tuberculosis or 311 per 100,000. Tuberculin tests were made on 2,049 healthy Chinese between the ages of 8 and 20 and on 97 Chinese hospital patients under the age of 8 years. Among the former there were 631 positives. Among the hospital patients 26 showed a positive reaction, 15 of whom gave evidence of clinical tuberculosis.—J. H. Korns, *China Med. J.*, 39:10 (Jan.), 1925; ab. *Jour. A. M. A.*, 84:1304 (April 25), 1925.

Public Health in the Straits Settlements, 1923—The Straits Settlements include Singapore with 457,571 inhabitants, Penang with 310,781, Malacca with 160,886 and the Keeling Islands, Christmas Island and Labuan. The crude birth rate for 1923 was 30.43 per 1,000 and the death rate 27.8, the latter being the lowest on record. Deaths from pneumonia were 1,710, from influenza 162, from beri-beri 904 (deaths from this disease were 1,388 in 1922 and 1,299 in 1921). Malaria and tuberculosis claimed 3,430 and 2,683 deaths respectively, fever unclassified 3,064, dysentery 839 and diarrhoea 411. There were 18 deaths from cerebrospinal meningitis, 56 from plague, 3 from smallpox but none from cholera. The

prevalence of venereal disease in Singapore has given such cause for anxiety that a committee was appointed to consider the question.—*Lancet*, 1:851–852 (April 18), 1925.

Health Conditions in Brunei, 1923—Brunei, situated on the northwest coast of Borneo, had a death rate in 1923 of 40 per 1,000 and a birth rate of 52.4 per 1,000. The total European population at the end of the year was 35 and their health was good. Malaria was less prevalent than in 1922. The percentage of school children showing splenic enlargement fell from 18.4 to 13.0. It is impossible to tell how much ankylostomiasis there is until an exhaustive survey has been made. There is little amoebic dysentery. It is estimated that at least 3 per cent of the general population are harboring active tubercle bacilli in their lungs. There were no epidemics in 1923. The natives are extremely reluctant to be seen by a European doctor.—*Lancet*, 1:851 (April 18), 1925.

Familial Neurosyphilis—IV. Incidence of Neurosyphilis Among the Parents of Congenitally Neurosyphilitic Children—A study of the parents in 20 families each of which contained one or more children with congenital neurosyphilis has been made. As a control a second group of 20 families in each of which one or more children suffered from congenital syphilis without demonstrable neurosyphilis has been studied. Among the mothers of neurosyphilitic children the incidence of neurosyphilis was 40 per cent, eight times as frequent as in the other group and nearly twice as frequent as in a large unselected group of women. Of the 13 fathers of neurosyphilitic children who were examined, 12 had syphilis, and all of those had neurosyphilis, the incidence of neuraxis involvement in this group being 3 times as great as among the fathers of children without congenital neurosyphilis and about two and one-half times as frequent as among a large unselected group of men with late syphilis. This difference is sufficiently striking to suggest the existence of a neurotropic strain of spirochaeta pallida responsible for the production of neurosyphilis. Familial predisposition to neurosyphilis may, however, be a factor of equal importance in determining this type of the disease.—J. E. Kemp and A. K. Poole, *Jour. A. M. A.*, 84:1395–1398 (May 9), 1925.

A Study of Pneumonia in Infants and Children—Reviewing 437 patients with pneumonia admitted to the pediatric service of the Lenox Hill Hospital from 1915 to 1923, it was found that 218 cases were of the lobar type and 199 were bronchopneumonia, a proportion which is contrary to the usual experience in regard to the pneumonia of children. The mortality in the bronchopneumonia cases was 7.1 per cent and the lobar pneumonia cases 12.9 per cent. The influenzal pneumonias were severe, but the mortality was low. Blood counts showed uniformly high white counts in lobar pneumonia and relatively low counts in bronchopneumonia.—R. D. Moffet, *Arch. Pediat.*, 41:743, 1924, rb. *Am. J. Dis. Child.*, 29:408 (March), 1925.

Health Conditions in Sierra Leone, 1923—The birth rate in Freetown, Sierra Leone, for 1923 was 19.3 and the death rate 30. The population was 44,142 in 1921. In the rest of the colony the population was 41,021, the birth rate 18.7 and the death rate 21.5. The total population of the colony and protectorate was 1,541,311 in 1921. The infant mortality though excessively high, appears higher than it is because of the incomplete registration of births. It is reported as 437 for Freetown and 261 in the rest of the colony. Two cases of smallpox were reported in Freetown and 17 in the protectorate. Chickenpox was fairly frequent. During the year 21,517 persons were vaccinated. The climate is tropical with a heavy rainfall and high atmospheric humidity during the greater part of the year.—*Lancet*, 1:801 (April 11), 1925.

SANITARY ENGINEERING

ABEL WOLMAN, C.E.

Water Purification in Providence, R. I.—Difficulties encountered in the operation of slow sand filter plant and methods employed to overcome them are described. One of the features of the plant is the neutralization of free carbonic acid by the addition of hydrated lime.—Julius W. Bugbee, *Canad. Eng.*, 48:259 (Feb. 25), 1925. A. W. B.

Treating a Hard, Muddy, Polluted River Water—The water purification plant at Topeka, Kansas, which consists of aerators, grit chambers, mixing chamber, settling basin, prefilters, coagulating basin, final filters and sterilizing apparatus, treats the hard, turbid and polluted water of the Kansas River. Electrolytic cells for the generating of chlorine have been used intermittently since 1923. Sufficient data are not available to determine the actual cost of sterilization by this method as compared to the operation of duplicate equipment of liquid chlorine machines.—N. T. Veatch, Jr., *Am. City*, 32:504 (May), 1925. A. W. B.

County Park Development and Regional Planning—Approval has been given to the expenditure of $10,411,000 for further expansion of Westchester County's (Bronxville, N. Y.) park and parkway program. It is a large-scale planning project, the objects of which are to promote healthful living conditions, provide recreational areas, and develop motor parkways to make such areas and various parts of the county conveniently accessible to each other.—Jay Downer, *Am. City*, 32:509 (May), 1925. A. W. B.

Practical Mosquito Extermination Measures as Applied in New Jersey—One of the most prolific breeding places for mosquitoes was the salt marsh extending along the entire coastal side of the state. Mosquitoes breeding from this source are capable of a flight range of one-half the state, and, unless checked, breed in such countless numbers as to make life unbearable. The problem was to devise drainage systems that would provide adequate outlets for the water covered meadows, and at the same time permit tidal action in the ditches. If the meadow to be drained is fairly high and has a suitable outlet, ditches 10 inches wide and 30 inches deep are dug at intervals, with spur ditches to drain salt holes. These ditches are designed to allow a change of water with each tide. Where the meadows are too low to permit gravity drainage it is necessary to dike the area and install automatic tide-gates, which close when the tide rises, and open when the tide recedes. If the area cannot be drained by this method pumps are sometimes used. In the problem of maintenance of the many million feet of ditches, it was found that hand cleaning was slow, expensive and not entirely satisfactory. Coöperation between the New Jersey Agricultural Experiment Station and the Atlantic County Mosquito Extermination Commission resulted in the design, construction and successful operation of a practical ditch-cleaning machine, capable of doing the work of many men with better satisfaction and at a greatly reduced cost.—Frank W. Miller, *Am. City*, 32:512 (May), 1925. A. W. B.

Laws Relating to Obnoxious Odors—The decisions referred to in this discussion indicate that, except where constitutional or property rights outweigh public necessity, the courts will prevent the pollution of the air either through the inherent power vested in them under the common law or by virtue of legislative mandate.—Irving I. Goldsmith, *Proc. A.S.C.E.*, 51:811 (May), 1925. A. W. B.

Methods for Determining the Origin, Prevalence, and Effect of Obnoxious Odors and the Evaluation of an Odor Nuisance—A complete investigation and report on an odor nuisance should cover the following points: (1) Origin and cause of odors; (2) degree or magnitude of the nuisance; (3) effect upon

health; (4) direct and indirect damage to property; and (5) remedial measures. The methods employed in determining the cause, scope and effect of a nuisance in the Metropolitan District of Providence, R. I., are presented.—Stephen DeM. Gage, *Proc. A.S.C.E.*, 51:820 (May), 1925. A. W. B.

The Atmosphere and Its Relations to Human Health and Comfort—"Oxygen, temperature, and light as they affect the human body and to a less extent the aqueous exchanges of the body, are directly related to atmospheric conditions; whereas the air may bear with it physically injurious dust particles, toxic gases, and under certain conditions the microbes of disease." Composition and characteristics of the normal atmosphere, physical effects of atmospheric pressure, chemical and thermal problems of ventilation, climate, season, disease, physiological effects of sunlight, bacteria in the air, atmospheric dust, industrial poisons, the effect of odors on health and the rôle of the engineer in promoting the purity of the atmosphere are carefully treated in this article.—C.-E. A. Winslow, *Proc. A.S.C.E.*, 51:794 (May), 1925. A. W. B.

Elimination of Odors from Garbage Disposal Works—After discussing the collection and treatment of garbage with reference to odors produced, the following considerations are given as being helpful in odor elimination: (a) There should be a good general plan for handling garbage covering the house treatment collection and final disposal; (b) good house treatment should be developed and the collection frequency oriented to the method of disposal and the location of the disposal plant as well as to convenience of householders; (c) collection wagons should be regularly cleaned; (d) disposal works should be built on suitably chosen sites with reference to character of disposal works and over-all costs of collection; (e) no garbage plant should be subject to serious overload when garbage collections are heavy, if odors are to be eliminated; (f) following a good general plan, clean operation and ample real capacity of disposal works suitably located, there should be added proper devices for the elimination of residual odors.—Samuel A. Greeley, *Proc. A.S.C.E.*, 51:832 (May), 1925. A. W. B.

Control of Odors from Sewage Treatment Plants—The subject in a general manner treats of the following: character of odors; source of odors; control of the production of odors, and control of the escape of odors.—John F. Skinner, *Proc. A.S.C.E.*, 51:847 (May), 1925. A. W. B.

The Detection and Elimination of Odors from Oil Refineries—Methods of oil refining are responsible for a number of odors which are not only unpleasant but detrimental to health. There are two general methods used to eliminate odors from petroleum gases and distillates. One is to pass all gases through a scrubber; the other method is to collect the gases by means of a vacuum system and burn them beneath a still or boiler.—Robert Spurr Weston, *Proc. A.S.C.E.*, 51:854 (May), 1925. A. W. B.

INDUSTRIAL HYGIENE

DRS. E. R. HAYHURST AND N. C. DYSART *

Occupational Diseases in Connecticut—The legislature of 1923 transferred to the State Department of Health the duty of collecting and reviewing reports of industrial diseases and, while the reports of such diseases which have been made to the department are still far from complete, they indicate beyond question the existence of a problem which is worthy of serious attention. During the year ending June 30, 1924, 87 cases of industrial diseases were reported to the department, including 31 cases of pneumokoniosis, 20 cases of lead poisoning, 5 cases of mercurial poisoning and 3 cases of benzol poisoning. We feel that the time has come for Connecticut to take a more accurate part in constructive industrial health work than has been possible in the past. We would urge the appointment of a special joint commission representing the Department of Labor and Factory Inspection, the Department of Health, and perhaps also the manufacturing and labor and insurance interests of the state, to consider the whole matter and report a program for the consideration of the legislature in 1927.—Connecticut State Dept. of Health, *39th Annual Report*, pp. 18, 37 (June 30), 1924.

Phthisis and Industrialism—Professor Collis gave two Harben lectures on this subject as an appointee by the Council of the Royal Institute of Public Health for the year 1924. Original research being specified, the investigation chosen by Professor Collis concerned the effects produced by changes in environment upon mortality from tuberculosis, and in particular from the pulmonary form—phthisis. The article is replete with tables, charts, and discussions. The investigation was a review of occupational records in the main, and the author presents a summary as follows:

1. Access to food is inimical to phthisis and beneficial to the resisting power of young adult life.

2. The same appears to hold good for healthy exercise with good wages.

3. The absence of aggregation of adults (so long as no definite adverse influence is present) is associated with a low mortality from phthisis.

4. Where the conditions of young adult life have not been specially favorable, the phthisis mortality fall has been slower at this than at later periods of life.

5. Where the phthisis mortality is below the standard, the age of maximum incidence tends to be rather later than for All Males.

6. Alcoholism has acted as a drag upon the tendency of the phthisis mortality to fall and for the age of maximum incidence to pass to later years.

7. Aggregation of workers in indoor occupations favors the spread of tuberculous infection, and the resulting mortality agrees in maximum incidence with that for All Males. Hence the deduction seems probable that infection from adult to adult is a main influence concerned in the spread of pulmonary tuberculosis.

8. Dusts which impair the vitality of the lungs predispose to tuberculous infection at that late period of life when wear-and-tear on tissues is becoming most pronounced; at the same time they predispose to other respiratory diseases. Silica dust exerts a peculiar influence in damaging the lung tissues, and probably by its toxic action in also causing fibrosis of the kidneys.—Professor Edgar L. Collis, *J. State Med.*, Vol. 33, No. 3 and 4, pp. 101-144 and 151-187 (Mar. and Apr.), 1925.

A Review of the Methods of Sampling Dust—This is the 2nd Part of Greenburg's "Studies on the Industrial Dust Problem." In regard to the size of dust particles present in the atmosphere, the analytical findings and opinions of McCrae, Watkins-Pitchford, Moir and others are cited, by which it is concluded dust particles with a diameter between 10 and ½ microns should be included.

* The editors of this Section will gladly receive contributions from members. Hartman-Ohio Bldg., Columbus, Ohio.

The number of particles is much more important than the weight of dust present. The author then takes up the *condensation methods* of dust sampling following the work of Coulier in 1875, John Aiken in 1889, and E. V. Hill in 1917. Next are considered: The *filtration methods* which have been used by a number of investigators, apparently beginning with Arens in 1894; the *washing methods*, beginning with Tissandier in 1874; the *sedimentation methods*, beginning with Miquel in 1879; the *impinging methods* having early origin and exemplified by such methods as those of Graham Rogers, Kotze, Cave, and E. V. Hill; and the *electrostatic methods*, devised by Hohlfeld in 1894 and developed by Cottrell in 1911 and in a greatly simplified form by Drinker, Thomson and Fitchet in 1923. Finally, *resistance methods* have been devised which make use of the fact that the resistance of a filtering medium increases as its pores become filled with dust. The apparatus known as the Anderson and Armspach dust determinator, described in 1923, is illustrative. This instrument is now being developed for use in testing air washers by the American Society of Heating and Ventilating Engineers. The author states that for this purpose the dust determinator last named may be of some value but for hygienic purposes it is surely of no value at this time, principally because no information is given concerning the various sizes and quantities of dust particles encountered. The author has attached an extensive bibliography. — Leonard Greenburg, *Pub. Health Rep.*, Vol. 40, No. 16:765–786 (Apr. 17), 1925.

Health of the Workers—Industrial workers constitute four-fifths of the 5,000,000 men who are insured in the Metropolitan Life Insurance Company. The author has made a study of the comparative expectation of life of industrial and non-industrial workers and finds that industrial workers may be distinguished by a marked diminution in their longevity from those who are engaged in other forms of employment, such as agriculture, the commercial and professional pursuits, etc.

At the present time, the expectation of life of men engaged in industrial pursuits of age 20 is 42 years, or that they may expect to attain the age of 62. On the other hand, those who are not engaged in industry may expect an additional 50 years at age 20. There would, therefore, seem to be a difference of about 8 years in the average expectation of the two groups. The handicap of 8 years in the expectation of life is in the nature of a tax which millions of men who are engaged in industry pay under present conditions. Possibly more important, but unfortunately less easily measured, is the tax of illness and of disability which is laid upon men in industrial pursuits. We also found in studies made some years ago by the Metropolitan that the amount of prevailing sickness caused an average loss of working time of 8 days per annum for gainfully employed men. The author's impression is that the actual loss is a good deal heavier than that, since much illness goes unrecorded, but it is impossible in the present state of knowledge to say whether this figure of 8 days per annum is more or less than that prevailing in the general population. We must, therefore, study our mortality figures as the best indicators.

Factors in the reduction of life expectancy are in part quite obvious; others less so. The extra hazard from *accident* is estimated to decrease the span of life of all workers about one year on the average; *tuberculosis* from 18 months to 2 years; *pneumonia* is twice as high in the industrial group as among non-industrial workers; and *degenerative diseases*, such as cerebral hemorrhage, Bright's disease, and organic heart disease, show strikingly the effects of industrial exposure. The author has held for years that industrial employment is probably the most important single factor in the tuberculosis death rate. The problem of controlling tuberculosis is today largely concentrated in the industrial classes. Age period for age period, the death rates still remain from two to three times as high in the industrial workers as among the non-industrial, that is, as among the professional, mercantile, and agricultural groups. Again the death rates are two to three times as high in the former class as compared with the latter from degenerative diseases during the active working years of life.

For the fiscal year ending August 31, 1923, there were reported to the New York State Department of Labor only 63 cases of occupational disease, while 710 cases were reported for compensation in the limited schedule provided for that purpose. The disparity between the two figures is due to the fact that many compensable diseases are not required to be reported. In Ohio, occupational skin diseases alone showed an average annual report of 560

cases over a period of two and one-half years. "If cases (of occupational diseases) are discovered it is only because the worker happens to fall into the hands of an unusually enlightened physician or because his condition is extreme."

Among remedial measures the writer states that the 17,000 physicians of the State of New York must somehow or other be taught that there is a problem in industrial hygiene; it is essential to educate the workers themselves in the matter; the employer has a most important part to play and is usually willing to coöperate with the state, but the latter must have the right kind of inspection force including experts on the staff who can solve complicated problems of ventilation, shop organization, and manufacturing processes; the power of the press in the educational campaign must not be overlooked; and, finally, there should be industrial clinics established in connection with our large general hospitals, and, as pointed out by Wade Wright, such clinics must have facilities for selecting their cases with the possible assistance of social workers in the admission room.—Louis I. Dublin, *Month. Labor Rev., U. S. Dept. of Labor Statistics*, pp. 8–14 (Jan.), 1925.

Philadelphia Health Survey of Industrial Plants—The Philadelphia Association of Industrial Medicine had the question raised before it of the number of industrial plants in that city which have medical service. The State Department of Labor and Industry could give no information. The present survey was made to determine how many plants have medical service, and the general character and extent of such service. Of approximately 6,500 industrial and commercial firms in Philadelphia, 4,500 are comparatively small, employing from 2 to 25 persons. These were excluded from this study as not being likely to have any organized medical service on account of their small size. The 1,882 plants of larger size constituted 1,041 employing from 25 to 75 persons, 402 employing from 75 to 150 persons, 248 employing from 150 to 300 persons, 87 employing from 300 to 500 persons, 69 employing from 500 to 1,000 persons, and 35 employing 1,000 or more persons. A preliminary letter brought information from 873 of these plants. The character of the medical service was classified as "complete" where there was a minimum of a dispensary, a physician and a nurse, as "incomplete" where only one or two of these features were present, as "emergency" where simply an arrangement of having a physician on call or a first-aid attendant was present, and "no medical service of any kind" where not even a first-aid attendant was present. Of the 873 plants of all sizes, 475 reported some kind of medical service; in 46 "complete," in 64 "incomplete," and 365 "emergency." In large plants employing 1,000 or more, 35, or 88 per cent have medical service, which is "complete" in 25 plants, "incomplete" in 8 plants, and of "emergency" character in 2 plants.

"Of (1,691) small plants in Philadelphia having from 25 to 300 employes (representing approximately one-fourth of the industrial population), 680 reports show 334, or 49 per cent, have medical service. This is complete in 4 plants, incomplete in 30 and of emergency character in 300. More than half, 346, report no medical service of any character."

Health examinations have been made of 1,300 persons employed in smaller plants. Nurses are employed by 50 of 87 larger plants while home visiting is done by 30 of these nurses, and 42 of the 87 plants have benefit associations.

So far as known, no summary similar to this has been made in other localities. The survey of tuberculosis in Philadelphia, made by Dr. Murray P. Horwood, of the Massachusetts Institute of Technology, shows the necessity for special efforts for the prevention of tuberculosis in industry. The campaign will have to enter the office and the factory more extensively than ever before. The Philadelphia Council is now conducting a physical examination of employes among smaller plants, of which 507 have been completed in time for reporting in August, 1924. In all 2,000 are to be made. Thus far factory workers as compared to office and field workers have shown the most defects. In the box factories, for example, 5.4 per cent of those examined were diagnosed as tuberculous as compared with 2.8 per cent in newspaper plants and 2.4 per cent in printing establishments. A comparison of particular defects, as regards the kind of work, indicated that factory workers had the larger number of defects of serious character although field and office workers showed more defects of a minor character such as those of the skin, eyes, throat, and tonsils. The numbers examined, however, are considered too few thus far to warrant extensive generalization from them.—Philadelphia Health Council

and Tuberculosis Committee, *Memorandum*, Vol. 2, No. 1 (Aug.), 1924, and Vol. 3, No. 1 (Feb.), 1925.

Report of **Committee on Industrial Hygiene, Conference of State and Provincial Health Authorities of North America, Toronto, June 5, 1925**—The Committee on Industrial Hygiene submitted its recommendations under six headings at the last annual meeting, to wit, and briefly, that the conference undertake the investigation of one or two tangible points in the field of industrial hygiene in order to establish factual data for future procedure; that occupational diseases be the chief subject of investigation; that a full- or part-time position be created by each state and provincial health department to undertake this work; that such work be facilitated by the passage of a regulation or statute requiring the reporting of occupational diseases by physicians (where not already required); that physicians and local health authorities be circularized in regard to this matter; and that annual reports upon a simple form be made for the purpose of compilation by this conference or by such authority as it may designate. The chairman also submitted the so-called "standard form" used by the Ohio Department of Health, as well as by some other states, for reporting occupational diseases. The committee's report was referred to the executive committee upon the motion of Dr. Kelley of Massachusetts. So far as we know the executive committee has not acted on the report.

A further development on this subject should be reported at this time wherein several cities (New York, Baltimore, Buffalo, Columbus, and a few others) have appointed personnel, usually part-time, to investigate industrial health conditions. Some movement is also manifest on the part of local health departments to foster citizens' committees on health of workers, such committees to act in an advisory capacity and, by voluntary effort, secure more adequate health supervision in plants and mercantile establishments, particularly those of small size which cannot provide adequate medical supervision of themselves. Certain tuberculosis associations in the country have taken particular interest in this matter because of the accumulating data purporting to show that the continual decline in tuberculosis rates is being held up by factors more or less dependent on industrial relationships.

Health departments, both state and local, have taken a direct interest in the subject of possible lead poisoning to the public as well as to certain employes, as at garages and filling stations, from the use of ethyl gasoline. A general conference was called by the Surgeon General of the U. S. Public Health Service upon this subject in Washington, May 20, 1925, when a resolution was adopted referring the question to a committee of seven experts to be reported upon by January 1, 1926. Similarly, the question of other poisonings and hazards used in interstate commerce has been broached and made the subject of a Senate Resolution in the last Congress with possible action at the meeting of the next Congress beginning December, 1925.

Your committee therefore points out the trend in this field of public health affairs and respectfully waits for some move on the part of the conference respecting its recommendations of last year.—John E. Monger, Chairman, Ohio.

FOOD AND DRUGS

HARRY W. REDFIELD, PH.D.*

Oysters Caused Typhoid—In Vol. XV, Nos. 2, 3 and 4 of the *Monthly Bulletin* of the New York City Department of Health, which appeared respectively in April, May and June, 1925, Dr. Louis I. Harris presented a comprehensive discussion of the typhoid fever epidemic in New York City which started about November 1, 1924, and ceased on February 15, 1925, reaching its highest level in the week before Christmas, when the disease was nearly eighteen times greater than the normal expectancy. There were 914 cases.

After excluding water, milk, ice, bottled water, lettuce, celery and watercress, Dr. Harris finds a small minority of the cases were due to out-of-town infection, contact and ice cream, while by convincing data and reasoning he fastens the blame for the large majority of the cases upon oysters. In implicating oysters, Dr. Harris says: "One cannot and dare not lightly reflect upon an industry which supplies a desirable and valuable form of food for public consumption, which represents an investment of many millions of dollars, and gives employment to thousands. But the duty of protecting the public health transcends all other considerations, and obliges one to publish the facts, however damaging they may be, as a necessary preliminary to the establishment of the proper remedies and safeguards."

As a result of his study, Dr. Harris does not find it possible to attribute the epidemic solely to oysters from West Sayville, Long Island, where sanitary engineers agree that the beds are apparently as well guarded from contamination as any in the country, and from which source oysters have consistently shown scores which compare most favorably with oysters from any other sources. He refuses to concur in lodging an indictment against West Sayville and letting the matter rest there, thus relieving all other oyster beds of suspicion. The issue, he believes, is much larger than the indictment of West Sayville. Not any one oyster-bed, but oysters coming from perhaps a number of sources he charges with complicity. He says: "If the matter is to be dealt with in a statesmanlike way, statesmanlike remedies must be found forthwith that are applicable to the growing, floating, shucking, storage, shipment and the final handling of oysters by retailers and local dealers. The remedies must be thoroughgoing and applied in a manner comparable to the safeguards which have been established to protect milk from pollution at each and every stage of its handling until it reaches the ultimate consumer. . . If the oyster-growers and dealers are more than penny-wise, they will welcome, assist, and expedite efforts looking to such an end." An enlightening tabulation is presented showing the source of the oysters eaten by 341 patients. It shows that they came from 22 locations in New York State, 7 in Virginia, 15 in Massachusetts, 1 in Rhode Island, 6 in New Jersey, 5 in North Carolina, 1 in South Carolina and 1 in Connecticut. Great South Bay, Peconic Bay, Gardiner's Bay, Chincoteague Bay and Buzzards Bay stand out most prominently as sources of supply.

After discussing "irregular and unauthorized sources of oyster supply" and also "contributory or potential sources of infection," Dr. Harris concludes with "remedies suggested." He points out a fundamental weakness in the present method of judging oyster purity by B. Coli score, urges rigorous policing of oyster beds; suggests further sanitary precautions to prevent sewage pollution; condemns floating under any circumstances and the transplanting of oysters from polluted beds; shows the necessity of coöperation between municipal, state and federal authorities to prevent water pollution; advocates cleanliness in handling oysters; their refrigeration during storage or shipment; the frequent medical examination of shuckers and others who handle oysters; and finally makes this significant statement: "The problem of secur-

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ing a practically pure shellfish supply, is closely analogous to that which was presented years ago, when, through successive sad experiences, we discovered evidences that an impure milk supply was playing a vicious rôle in causing outbreaks of typhoid fever and a very high infant mortality rate. Two outstanding lines of activity came to engage our attention: one was directed to maintaining a clean and sanitary environment in the dairies, and in the process of shipping and distributing milk; the other field of activity concerned itself with the pasteurization of a milk supply that had been rendered as clean as it was practically possible to make it. In similar fashion, while we are concerned in keeping oyster grounds as clear of pollution and infection as is practically possible, it would seem that the time has arrived to further purify our shellfish supply by chemical disinfection so as to reduce the hazard of typhoid fever from this source to a minimum. The chlorination of shellfish would seem to be a necessary added safeguard. It took years of effort to persuade various communities that the chlorination of the water supply was urgently needed, and that such chlorination, if properly performed, would not impair its value for drinking, cooking, and commercial purposes. It needs a similar campaign of education to overcome opposition to the chlorination of shellfish as an auxiliary measure of health protection. It must, however, be clearly kept in mind that such chlorination is not to be regarded as a substitute for a clean oyster supply and for clean methods of handling. Supervision and oversight of methods of chlorinating shellfish should be as careful as that which obtains in the case of plants for the pasteurization of milk, or for the chlorination of water."

Fabricated **Fake Fruit Syrups**—Both because this is the season when fruit beverages are in vogue and much welcomed and because of the public health bearing which attaches to the use of fruit juices, warning should be given that there are many fake products on the market at the present time. Fruit juices for the manufacture of beverages in the home, with the exception of apple juice and generally grape juice, are usually prepared for sale by the addition of sugar to make a syrup which is subsequently diluted. Genuine fruit syrup, that is, syrup made with 33 1-3 per cent or more of fruit juice is expensive to manufacture, and the temptation is great to substitute a product made with smaller quantities of the extracted juice of fruit or berries to which is added water, synthetic flavors and artificial colors so as to produce a cheaper product which will yield a greater profit. Obviously such a product will not have the nutritional or food accessory value of the genuine. So-called "orange syrup" made from water, sugar, orange oil (derived from the peel), a yellow dye and a gum (to make it cloudy) to resemble orange juice would be almost valueless if diluted, to supplement the use of pasteurized milk by children. These sophistications can sometimes be detected only by chemical analysis, but frequently the presence of the synthetic flavors may be detected through the senses of smell and taste, if a critical examination is made. The flavor will not be quite right for the fruit in question and the full bouquet of the natural fruit will be lacking.

In the interests of public health, food officials would do well to investigate such products on their local markets with a considerable degree of thoroughness. Some manufacturers of these fraudulent syrups are innocently using what are sold to them as concentrated true fruit flavors but which, in fact, owe their chief flavor to synthetics. A favorite form of product made for the manufacture of fruit syrups is prepared by extracting fruits or berries with alcohol and concentrating the alcoholic extract by distillation with incidental recovery of alcohol. To 95 parts of this concentrate is added 5 parts of synthetics. In such a product, the small percentage of synthetics has about 5 times the flavoring power that is furnished by the concentrated fruit extract. Moreover, alcohol does not extract all of the valuable constituents of fruit juices and even what is extracted is not in a chemically unchanged condition. The obvious moral is that if one wishes real fruit juice in a beverage he had best buy some fresh fruit and press it out, rather than to depend on what he finds in bottles on the shelves of the nearest delicatessen shop, even though such a course involves some effort on his part.

Sound Doctrine—When in *Baking Technology* for June 15, 1925, we saw an article by C. B. Morison entitled "The Iodin Problem and Food," we started its perusal with misgivings because it looked as though in addition to doctored salt the public was to be offered doctored bread for uncontrolled, hap-

hazard consumption. It was therefore with much relief that we read "Another thought in this connection surrounds the grave problem of making a food product of the nature of bread serve as a medium for medication. . . The addition of compounds other than those of the usual dough batch for the production of special types of medicated bread for use in the popular treatment of various diseases and conditions which are best treated under medical supervision would obviously lead to much misrepresentation and abuse. Prophylactic measures for the prevention of goiter should remain in the hands of public health officials and the medical profession, who will employ those methods most available to meet local conditions and individual cases."

A Preventable Menace—According to the United States Bureau of Animal Industry, in 1924 the federal meat inspection covered 66.5 per cent of the estimated total slaughter. The remaining 33.5 per cent was uninspected except for a small indeterminate portion which underwent inspection by state and local authorities. What is the condition with regard to meat inspection in your community, Mr. Health Officer? Are you allowing a health menace from uninspected meat to exist?

Timely Hint—If your city has one or more cold storage warehouses, there are probably contained therein stocks of frozen eggs, prepared during the spring and early summer and awaiting a profitable sale to bakers, hotels and restaurants during the fall and winter when fresh egg prices are high. Now is a good time for food control officials to go through such stocks for the purpose of eliminating from the local market such cans as may contain a product unfit for food. Unfortunately, there are unscrupulous packers of frozen eggs who will include in the product any "rots and spots" with which they think they can "get by." In almost any cold storage there will be found some of these bad lots. For anyone who knows the odor of normal edible eggs when in a frozen condition the method of examination is simple and sure. It consists of boring down into the frozen mass with a half inch bit driven by a high speed electric drill and then smelling of the hole immediately, while it is still warm from the friction of the bit. Any can of eggs showing a putrid or distinctly sour odor should be condemned as unfit for food. If doubt exists, a sample should be taken of the borings, and subjected to the chemical and bacteriological analysis which is fully described in *Bulletin* 846 of the U. S. Bureau of Chemistry. This bulletin also discusses the interpretation of the analytical results obtained.

Safe Milk—In the May issue of the *Monthly Bulletin* of the Indiana State Board of Health there are two articles which emphasize the health importance of pasteurizing all milk supplies, without exception. One of these was based on extracts taken from an address by Dr. Herman N. Bundesen before the thirty-first annual conference of Indiana Health Officers and the other was from the pen of Frank C. Wilson, the Director of the Indiana State Milk Laboratory. Taking as his thesis the position that there is no phase of public activity which bears so close a relation to the health and welfare of a community as that of safeguarding and properly controlling the milk supply, Dr. Bundesen urged close attention to the sanitary production of milk followed by pasteurization as an additional and necessary safeguard, except possibly in the case of certified milk. Among other statements was this: "According to investigations made by the U. S. Public Health Service there were 31 milk-borne epidemics in the United States during the first six months of 1924, occurring in various states from Maine to California. One city, Santa Ana, California, reported 632 cases of typhoid fever, with 48 deaths, traced to raw milk. When it is considered that the milk supply of most cities is obtained from a large number of dairies (25,000 in Chicago) and that cases of contagion will certainly occur in these dairies, oftentimes being unrecognized until the second or third week of illness, it is evident that proper pasteurization is essential, whatever other measures may be taken."

Pharmacology of Alcohol—In the June, 1925, issue of *American Druggist* there appeared an abstract of an address by Reid Hunt to the Rhode Island and Connecticut Sections of the American Chemical Society, which is of so much interest that it is quoted in full.

Within the last forty years there has been a considerable change in the views of the medical profession concerning the pharmacology of alcohol. Formerly regarded as a stimulant, alcohol is now classed as a depressant along with ether and chloroform. This change has resulted from improved methods

of study and from new viewpoints in physiology and pharmacology. Among the most important of the latter is the recognition that the animal body makes extensive use of inhibitory processes; numerous physiological activities are normally kept slowed down by higher controlling centers. When the latter are depressed by alcohol, ether, etc., the lower mechanisms are "released," with the resultant signs of stimulation such as increased activity, a more rapid heart action, etc. In other words, alcohol takes off the "brakes" and allows parts of the machinery to run faster; the result in some respects is the same as that of true stimulation, but there is this important difference: taking off the brakes will not help the machine to go up a hill as will a true stimulant.

This newer view of the action of alcohol has little bearing upon the possible usefulness of the drug in health or disease, for a depressant drug may be as valuable as a stimulant; it simply shows that proper discrimination must be employed in its use.

NATURE OF POISON IN "BOOTLEG" LIQUOR

There is little accurate information as to just what "bootleg" liquors contain aside from ordinary ethyl alcohol. Many very poisonous substances are contained in the various agents used to denature alcohol, but these have seldom been reported as present in bootleg liquor.

The chemists of the Prohibition Office reported analyses of 75,000 samples of illicit liquor, and the chief ingredient found, which is not present to the same extent in genuine whiskey, was acetaldehyde; they were inclined to attribute the deleterious effects of the spurious liquor to this substance. This explanation is not very satisfactory, however, for acetaldehyde is only seven or eight times as poisonous as ethyl alcohol itself, and in the samples analyzed there was an average of about 1,500 times as much alcohol as acetaldehyde. An individual would have to consume almost his own weight of the liquor in order to get a fatal dose of acetaldehyde; of course he would die of alcohol poisoning long before he could get a dangerous dose of the aldehyde.

The writer has tested a few samples of illicit liquor which were alleged to have caused death in man and found their toxicity for animals to be fully accounted for by the ethyl alcohol they contained; he is inclined to think that, unless the victims of such poisoning had taken something besides the liquor analyzed, the results were due to the quantity of alcohol drunk or the manner in which it was taken rather than to its quality. The depth of intoxication and the danger to life depend upon the concentration of alcohol in the blood, and this is determined not only by the amount of alcohol taken but by its concentration. There is a rather small margin between the amount of alcohol necessary to cause deep intoxication and that sufficient to cause death; hence if an individual takes a large amount of strong alcohol within a short time he may get enough to cause not only intoxication but death. Deaths of this nature have frequently resulted from the taking of genuine whiskey upon a wager that a given quantity could be drunk within a short period.

METHYL ALCOHOL POISONING

The view that methyl alcohol poisoning is due to impurities rather than to the methyl alcohol itself is considered to be untenable, although it seems to be true that some samples of wood alcohol contain allyl alcohol, which is much more poisonous than methyl alcohol itself, in amounts sufficient to distinctly increase the toxicity of the wood alcohol. Pure methyl alcohol, however, is much more poisonous than ethyl alcohol. The cause of this difference is obvious when the pharmacological action of the two alcohols is considered; although there are certain limitations to its use, ethyl alcohol is a food—in fact, as much as 40 per cent of the food requirements of a man can for a time be met by ethyl alcohol—whereas methyl alcohol has, for practical purposes, no value whatever as a food. The body can quickly and almost completely oxidize (and utilize) moderate amounts of ethyl alcohol, but it has great difficulty in either destroying or excreting methyl alcohol. The latter remains in the body for long periods and, probably with its oxidation products (formic acid and probably formaldehyde), has a very injurious action, especially upon the eyes. Methyl alcohol is more volatile than ethyl alcohol and the inhalation of its vapors by painters and others has frequently caused death or blindness; one author reported sixty-eight such cases.

CHILD HYGIENE

TALIAFERRO CLARK

The Structure of Teeth in Relation to Dental Disease—From a recent investigation of a large number of ground sections of teeth, to all outward appearances of perfect structure there appears to be hardly a tooth of civilized man which does not show some defects of structure, and in the few teeth from neolithic skulls examined defects were of equal extent. A third molar of neolithic age showed more numerous imperfections of structure than any apparently sound modern tooth examined; this tooth, besides other defects, had a deep fissure in the enamel extending in the dentine, although before section the tooth appeared to be of particularly fine quality. Despite the fissure and defects in enamel there was not a trace of caries.

With regard to the effect of defective structure on the initiation of the carious process, too much attention is perhaps given to the lime salt question, to the partial exclusion of that of the action of the fluids of the mouth or the constituents of the blood plasma.

In view of the defective calcification of the enamel of apes, which nevertheless remains immune to caries, defective calcification may probably be a much less important factor in the production of caries than has hitherto been supposed.

Black (quoted by Mummery) considered that environment and not tooth structure is the principal predisposing cause of caries, that imperfections, fissures, etc., are causes of caries only in the sense of giving opportunity for the action of the causes that induce it.

Defects of structure of the enamel are common in modern teeth; in this respect they compare on the whole unfavorably with those of ancient races and with uncivilized man, but we are still much in the dark with regard to the influence, in themselves, of these defects on caries, and it would appear that such defects influence the occurrence of caries only where associated with retention centers for fermentable foods. There can be little doubt that such defects in the enamel will lead to more rapid destruction when once the process of caries is started and thus act as a contributing cause.—J. Howard Mummery, Medical Research Council, *Special Report Series No.* 70, 1922.

The Scope of School Dental Service—It is well known that dental defects exceed in number all other defects observed in school medical examinations. This is due to a number of causes: developmental, parental indifference, neglect and lack of knowledge of the importance of dental attention for growing children. There is increasing evidence that dental defect is a retarding factor responsible for an undue number of repeaters in the public schools each year. For this reason, measures designed for the prevention and correction of dental defect are of increasing concern to the school authorities. Chief among these measures is the establishment of school dental service.

Because the problem is so great, the number of children requiring dental attention so large, and relatively few children can be cared for in a given time by one dentist, the scope of school dental service requires very careful consideration. The following comment on this point in a recent report submitted by Dr. C. Carroll Smith, school dentist at Peoria, Illinois, where a very effective school dental service has been established, is of interest:

> Reparative practice of dentistry among the children should be kept at the minimum because of the expense involved and the equipment and number of dentists that would be necessary to carry on the work. . . . The main duty of the dentist in the school should be to instill clean mouth habits, to develop appreciation of the proper care of the teeth, to teach the right use of the toothbrush and to keep the child comfortable so that he can reap the full benefits of his educational opportunity. Prevention rather than repair is a keynote to the situation. Only the simplest service can be rendered in the dispensaries, stress being laid on preventive measures to conserve the sixth-year molar, to keep such deciduous teeth as can be preserved in a useful condition, and to remove such ones as are abscessed and beyond usefulness. The entire trend of the work should be educational and prophylactic.

Salvate **Parvulos**—The Save the Children Fund International Union has for the last year published a bulletin in which the principal facts concerning child welfare in all countries is passed in review. The Union purposes to supplement this bulletin by a periodic bibliography wherein will be briefly analyzed the reports and articles appearing in all languages on questions of child health and welfare.

The bibliography under the title Salvate Parvulos henceforth will be regularly published by the Save the Children Fund International Union with the aim to make known the more recent and the more important work without pretending to exhaust the subject. The bibliographic notices properly called will be copied literally from the title. They will be followed by a brief analysis tending to set forth the essential ideas of the article. The notices will be classified not in methodical order but simply in alphabetical order by typical word. The decimal classification, very much favored in several countries, notably in Belgium and United States, is justifiable only in a frequent publication giving only a small number of notices. As much as possible the articles will be analyzed in the same language in which they are published. Exception will be made in the case of language but little used where the analysis is given in French.

The Save the Children Fund International Union hopes that those called to consult this bibliography shall by remarks and criticism aid in making it an instrument of work as useful as possible.

Each publication, relative to child welfare, which shall be addressed to the Save the Children Fund International Union will be made the object of notice in Salvate Parvulos.—*Bibliographie Paraissant Tous Les Deux Mois Des Ouvrages et Articles Relatifs A L'Enfant*, Mars-Avril, 1925.

Prevention of Puerperal Sepsis—Despite the great advance made in preventive medicine in recent years and the increase in life expectation by about six years within a generation, but little improvement has been observed in the mortality from puerperal sepsis. This condition is in large measure due to the lack of knowledge of the causes of puerperal sepsis. Based on observations of 679 consecutive midwifery cases occurring under his own general supervision in a municipal maternity home, Ivens concludes that latent or preëxisting infection, streptococceal, gonorrheal, or coliform, is responsible for a considerable percentage of cases of puerperal sepsis; that the organism may not infrequently be isolated by bacteriological examination of the urine during pregnancy, especially in cases of streptococceal or coliform infection; that intermittent albuminuria during pregnancy is an indication for a bacteriological examination of the urine, even in the absence of urinary symptoms; that with latent infection uterine inertia is more likely to occur, especially when associated with premature rupture of the membranes; that bacteriological facilities for the examination of discharges during pregnancy, if utilized, will enable suitable precautions to be taken and an appropriate serum to be obtained; and that with a reliable technique, in good surroundings, operative measures need not cause puerperal sepsis.—The Prevention of Puerperal Morbidity and Mortality, Frances Ivens, *Brit. M. J.*, March 28, 1924.

Report of the Children's Bureau for 1924—The recently published "Twelfth Annual Report of the Chief of the Children's Bureau" makes available in a 36-page pamphlet an interesting, condensed account of the work of this important bureau of the federal government, which may be read with profit by students, members of civic agencies and lawmakers.

The activities of the bureau are described under the following main divisions: maternity and infancy; child hygiene; recreation; child labor; dependent, neglected and delinquent children; state child welfare commissions; state child welfare legislation; publications; and the distribution of publications. Those whose information regarding the Children's Bureau has been gained from its connection with the passage of the Sheppard-Towner Bill, as well as those whose interest in the bureau's support has been based wholly upon sentimental reasons will do well to examine this document and observe the record of substantial, painstaking studies conducted under the direction of this governmental agency.

Very slowly the people are beginning to realize that empirical legislation is costly, and that it will give way to scientific legislation only when such studies as the Children's Bureau is making available are utilized by our lawmakers. How to get the results of such studies properly before members of state legislatures and of Congress is a problem deserving considerable attention.

EDUCATION AND PUBLICITY

EVART G. ROUTZAHN *

Health Week in Palestine—"About 25 organizations working directly or indirectly for public health in all parts of the country were represented at the organization meeting."

The program included Hygiene Day, Baby Day, Food Day, Microbe Day, and Recreation Day.

"A Health Week poster in Hebrew and Arabic, which had received the award of the committee, was displayed in shop windows.

"The chief propaganda was carried on in the schools of the Waad Ha-Hinnuk and of the Government. Leaflets bearing on each day's program were given to every child in its own language. One hour of the morning was devoted to a talk by the teacher or by the kindergartner on the subject of the day.

"In the evening the school houses, synagogues and other public buildings were used for lectures, prepared and delivered by physicians and dentists and sanitarians, on all varieties of health subjects. . . . In Jerusalem 48 lectures were delivered. . . . On the fourth day, it is reported from Tel-Aviv, 1,300 persons attended the health lectures in various parts of the town; and in Tiberias lectures and illustrated talks were held each day. . . . The feature that seems to have aroused the most widespread interest was the exhibit in Jerusalem, in one of the Russian buildings on the Jaffa Road." This was an extensive affair displayed in 14 sections. Both *Mrs. Don't Care* and *Mrs. Do Care* were there.

"In the course of the two weeks during which the exhibit was open it was visited by 30,000 persons. The pupils from the schools came under the guidance of their teachers. A day was set aside for Moslem women when they could come without fear of meeting men. . . . It was noted that many Moslem women came at other times too and, in their eagerness to see all there was to be seen, unveiled themselves in the presence of strangers.

"At the end of Health Week, prizes were offered to the children of the six upper classes of the schools for the best essays on the subject, 'What Did I Learn From Health Week?' The country was divided into six circuits: Jerusalem, Jaffa, the Judean colonies, Haifa, Tiberias, and Safed. To each circuit three prizes are to be awarded."—*Hadassah News Letter*, 114 Fifth Avenue, New York, N. Y.

At Denver in June—At last the National Conference of Social Work has followed the example of the American Public Health Association. At the recent Denver meeting an Educational Publicity Division was established with which the Committee on Publicity Methods in Social Work will coöperate.

Program at St. Louis—Chairman Tobey has under way a program of half day and luncheon sessions touching practical subjects which are everyday matters with many health workers.

One session, that devoted to a public speaking clinic, should be more than a study of speaking technique. It is expected to provide several stimulating samples of high grade ten-minute talks before special types of audiences. (The big reason why all publicity workers should be there.)

The Astor Challenge Shield Winner—Baby Week has become an annual event in England, being fostered by the National Baby Week Council, 117 Piccadilly, London, W. 1. The Challenge Shield was awarded to Leicester where the Health and Baby Week "was a campaign appealing to all classes of the community of the town. One thousand mothers and babies were given a special tea in De Montfort Hall, Leicester; there was a Carnival Dance for the younger people where four prizes were offered for the fancy dress which proved the best representation of a Health Week Slogan; an Illuminated Car ran according to a definite programme; this was destined

* Please address questions, samples of printed matter, criticism of anything which appears above, etc., to Evart G. Routzahn, 130 East 22d St., New York City.

to arrest the attention of the 'Man in the Street,' and also to collect funds for the Seaside Home for Consumptives; over £1,100 was collected for this object during the Week; the school children and factory workers had the facts of health put before them by the local doctors and nurses who gave health talks at factories and schools during the week. Twelve thousand children attended health film displays."

This paragraph is from *National Health*, 5 Travistock Square, London, W. C., which should be read by all who wish to keep in touch with popular health activities in England.

Exhibits at St. Louis—We count upon an exhibit showing how the Texas Department of Health manufactures its own posters and placards. Dr. H. E. Kleinschmidt of Toledo will let us see the mimeographed posters he distributes among factories. Dr. Lee K. Frankel will have there examples of a new plan of aiding health meetings conducted by local women's clubs. Virginia Wing of Cleveland will provide all details of some successful clinic attendance campaigning. (To be continued.)

What will *you* have there? (Another reason why publicity workers should be there.)

Joyful Learning of the Joys of Health—Methods of teaching health and learning health so that both teachers and children "love to do it" are set forth in the several well known series of publications issued by the United States Bureau of Education. On request the Division of Physical Education and School Hygiene, Bureau of Education, Washington, D. C., will send copies of most of the new publications as they appear. "Health Education Publications" and "Publications Relative to the Work in Physical Education and School Hygiene" are two lists of Bureau publications already issued which will be sent free.

People We Should Know—Health workers were well represented in the publicity activities at the Denver meeting of the National Conference of Social Work.

T. J. Edmonds, Iowa Tuberculosis Association, was elected chairman of the Committee on Publicity Methods in Social Work. R. H. Hixson, Oklahoma Public Health Association; Orlo F. King, Infant Welfare Society, Chicago, and Virginia Wing, Cuyahoga County Public Health Association, Cleveland, are other health workers elected to membership in the executive group.

Mary Swain Routzahn, 130 East 22d Street, New York, N. Y., continues as secretary and editor of the same group.

Eleanor P. Brown, National Committee for the Prevention of Blindness, represented the health field in the public speaking clinic.

Headquarters at St. Louis—As at Detroit, a center for education and publicity workers will be maintained at the St. Louis meeting. Here will be found good examples of annual reports; selections from the most interesting printed matter issued by official and private agencies; press releases and newspaper clippings; specimens of the publications and materials which have been mentioned in the Education and Publicity Department of the JOURNAL; examples of appeal letters; descriptions and illustrations of stunts and features; samples of health material produced by multigraph or mimeograph. (Another reason why publicity workers should be there.)

Visitors to Other Lands—If any readers of the JOURNAL attended the health exposition held in Vienna several months ago please tell us about it. Likewise we would value first-hand reports and impressions from any gathering where educational publicity was discussed or materials were shown at home or abroad.

Dates Ahead—How can health workers utilize Labor Day? Can you offer to help make sure that food and drink at Labor Day affairs are clean and wholesome—and get some publicity for doing so? Is it practicable to do the same at county fairs? Will there be a chance for an acceptable and effective float in a Columbus Day parade? Can health workers offer any helpful and practicable suggestions in connection with Thanksgiving? Is there any desirable tie-up possible with Red Cross Roll Call? Can your staff members account for memberships among certain groups? And will you be silent and invisible during the Christmas Seal Sale, or will you further that effort and keep in sight during the hectic December weeks? Please report your plans and your ideas.

Other People We Should Know—Chairman James A. Tobey of the Education and Publicity Section has been made chairman of the Health Division of the National Conference of Social Work.

Louise Franklin Bache, Syracuse Health Department, handled the publicity for the recent

money raising campaign of the Syracuse Community Chest.

Ella Cyrene Bakke of the Colorado Tuberculosis Association conducted newspaper publicity for the National Conference of Social Work in Denver and edited the *Daily Conference Bulletin*.

C. E. Lakeman, long with the New York State Department of Health, is handling some interesting publications for the Joint Committee on Methods of Preventing Delinquency, with which he is now connected.

John Ritchie helps to prove that you can't keep a good man down—or out of public health work once he has had a substantial taste of it—by being elected a director of the Malden, Massachusetts, Anti-Tuberculosis Society.

Isabel L. Towner, National Health Library, has been aiding the Massachusetts Tuberculosis League in re-organizing and cataloging its library. "The $270 which is secured annually from affiliated membership dues is put into the League library and magazines" for use throughout the state.

A New Type of Factory Poster—"Keep Well," a mimeographed one-page "weekly bulletin" is issued by Dr. H. E. Kleinschmidt, Toledo Public Health Association, which promises to get more attention than the usual small poster. It is done on tinted mimeograph paper 8½ by 14 inches. The lettering is by hand—not by machine—of a fairly large size, simple, and distinctive because it is hand work. One issue carried a small cartoon of a housewife in the midst of a preserving job with this heading: "Preserving Children! Do You Know How? A secret every one should know."

Then follows: "A good time to begin the preserving process is in the Spring—*Provided* it is kept up during the Summer, Fall and Winter." The remaining space is given to a "Recipe for Preserving Children."

What Are We Planning for the Fall and Winter?—Please tell the editor what you have up your sleeve or in your date book for the months ahead. What audiences do you plan to reach? What subjects will you seek to present to your people? What educational or publicity projects will you launch? What is "the picture ahead"? Kodak it on your typewriter and send it in.

The Automatic Health Clown—The untiring clown whose willingness to serve the cause of public health has been announced in the advertising pages of the JOURNAL has already served some health agencies to their satisfaction. We hope for some place for a discussion at St. Louis of how best to use such devices.

The manufacturer of the clown has indicated his readiness to increase the efficiency of his clownship by closing up the lower opening where now the health placard receives a second but confusing display. In that case the flashing light will be thrown upon the placard when held aloft in the clown's hands. This rearrangement will concentrate the attention of the onlookers, thus increasing the educational effectiveness of the device.

Child Health Conference—The Fourth Annual Health Education Conference called by the American Child Health Association was held in Chicago, June 22–26. Dr. Thomas D. Wood and Professor C. E. Turner took prominent parts and many public health workers known to readers of the JOURNAL were present. The editor of this department presented some of the difficulties facing teachers in securing material for study and class room. An extended report of the conference will be published.

What Books Children Will Read—Children have fairly definite ideas as to what they will read. Generally their ideas are particularly clear as to the physical form. Vera Kelsey, in the New York *Times Book Review* of June 21, 1925, offered the following:

1. The book must be illustrated.
2. It must not be written in the first person.
3. Its pages must show plenty of white space—that is, must contain lots of conversation.
4. The print must be large.
5. The book must be of moderate size.
6. If two books have these characteristics in common, the one with the most attractive cover will win the choice.

A very similar statement was presented at the recent Child Health Conference in Chicago, and doubtless will be included in the printed report of that conference.

Will readers of the JOURNAL please report to editor of this department any health publications for children which approximate these specifications? We wish to exhibit them at the St. Louis convention in October.

LAW AND LEGISLATION

JAMES A. TOBEY, LL.B.

A REVIEW OF THE 1925 STATE HEALTH LEGISLATION

The legislatures of forty-two states and three territories were in session during 1925. As a consequence a considerable amount of new health legislation has been added to the statute books. Through the courtesy of the health officers of the states listed below we are enabled to present a review of current health legislation passed in twenty-five states. The six states whose legislatures did not meet this year were Alabama, Kentucky, Louisiana, Maryland, Mississippi, and Virginia. The following review is divided into two parts, the first listing the new laws by states, and the second giving a summary and comment on the whole situation. Copies of many of the new laws are on file at the Association office and further information regarding specific provisions or other matters of interest will gladly be supplied on request. An editorial on this subject will also be found on page 710. This review and editorial went to press on July 16. Information subsequently received will be reported in this department later.

ARIZONA

Bread—Chapter 13. To prevent dissemination of "rope" and other bakery infections. Prohibits return of bread to dealer. Provides for sanitation and standard weights of bread.

Cattle—Chapter 31. Amends Civil Code in relation to quarantine and slaughter of diseased livestock. Outlines powers of State Livestock Sanitary Board. Creates office of County Sanitary Meat Inspector for every county, and outlines duties in detail.

Milk—Chapter 74. Amends law in relation to dairy sanitation, registration of dairy trade marks, sanitary handling of milk for sale, and testing of milk.

Vital Statistics—A new complete state vital statistics law was passed. It more or less follows the Model Law. This new act has been issued in printed form by the State Board of Health.

A comprehensive narcotic law was before the legislature, but was not enacted.

CALIFORNIA

County Health—Chapter 8. Amends law regarding organization of county sanitation districts (for sewage disposal works).

Chapter 457. Amends law regarding organization of county water districts.

Food—Chapter 58. Amends law relative to packing, marketing and sale of apples. Fixes grades and standards to be enforced by state director of agriculture.

Chapter 421. Sets standards for canned fruits. Enforcement by the director of agriculture.

Chapter 424. Amends cold storage act. Requires labeling of such goods.

Chapter 425. Prohibits sale of eggs unfit for human food. Enforced by state board of health.

Chapter 428. Requires license for certain types of canning. Enforced by state board of health.

Maternity—Chapter 316. Provides for licensing, inspection, and regulation of maternity homes by state board of health.

Nurses—Chapter 139. Amends law regarding registration. Examinations to be held at least every six months. Certificates to be renewed annually. Reciprocity with other states provided for.

CONNECTICUT

Dental Hygiene—Amends law regarding state dental commissioners, licensing of dentists, and employment of dental hygienists, whose duties are defined (S. B. 511).

Food—Amends slaughterhouse law, by permitting towns to establish and maintain such institutions (H. B. 410).

School Hygiene—Authorizes school boards which have not appointed a school physician to appoint a nurse.

An index of legislative bills pertaining to health, issued by the State Department of Health, contains the titles of 73 such bills before the Senate and 101 before the House. Of these, however, 43 were to validate issuance of

medical practice certificates by the Eclectic Medical Examining Board to various individuals. It will be remembered that the state had a medical diploma scandal several months ago.

A large number of other freak bills, including abolition of vaccination, sanction for all kinds of healers, etc., were apparently not successful.

DELAWARE

Food—Amends bottling law by providing fine for adulteration of soft drinks.

Sanitation—Gives state board of health power to regulate sanitary toilets in incorporated communities and places control of water supplies under this board, requiring submission of plans for approval.

State Health—Changes name of Health and Welfare Commission back to State Board of Health.

Tuberculosis—Provides for taking over by the state of a sanatorium previously supported by a voluntary society.

Vital Statistics—Amends present law so as to conform practically to the Model Law. Midwives, as well as physicians, are also now to receive a fee for reporting births.

IDAHO

Communicable Diseases—Requires physical examination of all employes of "eating places." Prohibits employment of diseased persons (H. B. 137).

Food—Provides rules for sanitation of "eating places" (S. B. 47) (see "Hotels").

Hotels—Amends law. Provides for sanitary practices in hotels. Also requires Department of Public Welfare to inspect food stores at least once a year. Other provisions relating to sanitation of food stuffs.

Sterilization—Provides for the sterilization of all feebleminded, insane, epileptics, habitual criminals, moral degenerates, and sexual perverts. Creates a state board of eugenics of five members. This board selects persons to be sterilized, after suitable inquiry, but if they refuse permission for the operation, court action is had. This is an admirable instance of "due process of law."

ILLINOIS

At the time of going to press, no bills were reported as having been signed by the Governor, but Dr. Rawlings, the State Director of Public Health, in his usual efficient way has submitted a comprehensive statement of action on health bills before the legislature. Bills which had passed one branch were as follows:

General—S. B. 304. To regulate the authority of public officers in entering private places where sick persons are confined (backed by the usual anti-medical groups). Passed Senate June 9.

Municipal Health—S. B. 526. Amends law so that a department of health could be established in lieu of a board in cities and villages. Passed Senate June 9.

Physical Education—S. B. 251. Provides for physical training in all public and normal schools. Passed Senate April 15.

Tuberculosis—H. B. 176. Provides for tuberculin testing and eradication of bovine tuberculosis. This bill has passed in both Senate and House. S. B. 120 repeals an act prohibiting use of tuberculin test. It has passed Senate. S. B. 257 would appropriate three million dollars for this purpose for a two-year period, but an amendment has cut the sum in half.

Bills in both Senate and House amending the local tuberculosis hospitals act have had second readings.

Venereal Diseases—H. B. 637 to regulate carnivals, passed House June 12. A bill to enable cities and villages to control venereal diseases was tabled.

Other bills which had been advanced, though not reported as passed, included measures for county health superintendents (S. B. 116) and a bill for the formation of mosquito abatement districts (S. B. 82).

Among measures which were tabled or otherwise failed to pass were: licensing of plumbers' assistants, and a plumbing code; provision for community nurses; regulation of milk; establishment of a sanitary water board for the state; regulation of laundries; and a number of miscellaneous measures dealing with sanitation.

INDIANA

No new health legislation. Only two such measures were considered, one to create a state "eugenicist," the other to establish full-time county health units. Neither passed.

IOWA

Maternity—To regulate maternity hospitals.

KANSAS

Public Health Nurses—Authorizing appointment in counties having population of 120,000 or more.

MASSACHUSETTS

Cancer—Chapter 20. Directs departments of public health and public welfare to investigate prevalence of cancer, facilities for treatment, and to recommend new facilities, if desirable.

Garbage—Chapter 23. Directs department of public health to study disposal of garbage, waste and refuse.

Municipal Health—Chapter 303. Amends law so as to enable towns of less than 3,000 persons to acquire resident physicians, by giving such doctor various appointments.

School Hygiene—Chapter 17. Amends law relative to contracts for the care of underweight and undernourished school children.

Shellfish—Chapter 300. Directs department of public health to investigate contamination of shellfish and report publicly thereon. Prohibits taking of shellfish from proscribed areas. Provides for certificates from department.

Venereal Diseases—Chapter 215. Amends law so as to make syphilis and gonorrhea reportable to local boards of health, either directly or through the department.

Waters—Chapter 16. Directs department of public health to investigate pollution of Aberjona River.

MICHIGAN

Communicable Diseases—Distribution of free biological products is provided by one act. This also carries an appropriation for purchases of antitoxin or erection of a plant for its manufacture. By another act the State Health Commissioner was given authority to establish not more than three branch bacteriological laboratories in the state, subject to approval by the State Administrative Board.

Maternity and Infancy—The federal law was again accepted and $30,000 appropriated for this purpose.

Municipal Health—The issuance of bonds for sewage disposal plants may be ordered by the courts or the State Department of Health. "Next to the tuberculosis laws, this is the most important act passed."

Public Health Nursing—County boards of supervisors are enabled to appropriate money for the maintenance of county nursing services. Educational standards are set forth.

Tuberculosis—Dr. Olin writes as follows:

"Perhaps the most important [acts] passed were those for improving the care of the tuberculous: a half million dollar appropriation for the construction of a new state tuberculosis sanatorium and a law authorizing county boards of supervisors to erect county tuberculosis sanatoria and to increase the state aid given county sanatoria.

"Michigan has had county sanatoria but there has been no standard for their administration. There was an insufficient number of beds to properly care for all the cases in the state and insufficient means for the care of indigent cases. A report by an inspector from the National Tuberculosis Association says that conditions in Michigan county sanatoria range from the worst to the best.

"State aid has been limited to $3,000 for each sanatorium. The new law provides state aid of $1 per day for each indigent patient, which sum will be greatly in excess of the present $3,000. It makes it necessary for county institutions to be properly maintained before they can receive state aid. A small tuberculosis institution which has no full-time medical service and which is practically only a boarding house for consumptives, cannot receive state aid.

"It also makes it illegal to build a county tuberculosis sanatorium on a poor farm.

"The new state tuberculosis sanatorium will replace the present state sanatorium which is inadequate in many ways. Its type of construction does not conform to up-to-date standards and its facilities are insufficient for the proper medical care of patients."

Vital Statistics—Two old vital statistics laws, one for the registration of births and one for the registration of deaths, were combined, and a fee of fifty cents for reporting each birth paid to the physician by the county was removed. This means a saving to taxpayers of about $50,000 a year. A fee for reporting tuberculosis was also removed.

MINNESOTA

Barbers—Chapter 252. Amends law relative to permits.

Communicable Disease—Chapter 125. Authorizes county commissioners to acquire forty acres of land for communicable disease isolation farms.

Health Officers—(See Municipal Health).

Hospitals—Chapter 311. Authorizes towns and villages to enter into contracts for care of indigent sick.

Chapter 310. Relative to payments of damages by city and county hospitals.

Chapter 171. Exempts public hospitals from taxation.

Medical Practice—Chapter 113. Relating to limitation of actions in malpractice suits.

Mental Hygiene—Chapter 89. Amends law re commitment of inebriate and insane to U. S. Veterans' Hospitals.

Chapter 308. Amends law relating to supervision of paroled insane, feebleminded, and epileptic patients.

See also sterilization.

Milk—Chapter 164. Amends law re licensing of persons operating milk or cream testing apparatus.

Chapter 875. Provides for licensing of creameries manufacturing butter.

Municipal Health—Chapter 215. Authorizes appointment of deputy health officers in cities of the third class.

Chapter 144. Amends law relating to sewer districts.

Poisons—Chapter 187. To safeguard distribution and sale of certain dangerous caustics, corrosive alkalis, acids, etc.

Chapter 339. Relates to practice of pharmacy.

Public Health Nursing—Chapter 196. Amends law so as to require registration of school nurses.

State Organization—Chapter 426. Reorganizing state government. Article XI refers to state department (instead of "board") of health.

Sterilization—Chapter 154. Provides for sterilization of the feebleminded and insane, if consent is given (see also this subject under Idaho).

Tuberculosis—Chapter 213. Provides for treatment of persons, without established legal residence, in public sanatoria at state expense.

Chapter 338. Provides for joint county sanatoria.

Chapter 243. Authorizes counties with over 400,000 population to issue bonds for enlarging sanatoria.

Resolution No. 6. Requests location by federal government of 500 bed hospital in state for care of veterans.

Vital Statistics—Chapter 190. Amends the vital statistics law.

Waters—Resolutions 14 and 16 provide for investigations of pollution of boundary waters between Minnesota and Wisconsin.

Among measures not passed were bills: for aid to typhoid carriers, although an appropriation of $6,000 for this purpose was granted; anti-vaccination and anti-vivisection; county boards of health; chiropractic and naturopathic bills. The governor vetoed a bill creating a state board of massage examiners. Dr. Chesley is to be congratulated on the apparent success of this notable legislative program.

NEW HAMPSHIRE

Food—Requires licenses and registration for non-alcoholic beverages.

Poisons—Requires special labeling of caustics, lye, etc.

Water—Gives municipalities right of eminent domain in establishing water supplies.

NEW JERSEY

Communicable Diseases—Chapter 19. Permits cities not operating municipal hospitals to provide care for patients.

Food—Chapter 245. Amends law relative to sale of evaporated or concentrated milk.

Oysters—Chapters 31 and 32. Amends shellfish purity laws.

NEW MEXICO

County Health—Permits counties to deposit with State Treasurer funds to match donations for health work.

Vital Statistics—Authorizes issuance of free birth or death certificates to veterans.

NEW YORK

Blind—Chapter 381. Investigation of blindness.

Child Hygiene—Chapter 14. Extends time for report of a committee on crippled children.

Chapter 227. Re the physically handicapped.

County Health—Chapter 189. Appropriates $38,725.83 for state aid to county health institutions.

Chapter 309. Sewer commission for Westchester County.

Dental Hygiene—Chapter 364. Amends law so as to require dental hygienists to be high school graduates.

Food—Chapter 359. Amends law, giving commissioner power to make rules regarding taking of samples.

Chapter 363. Amends law re cold storage.

Chapter 612. Amends law re sanitation of foods.

Medical Practice—Chapter 666. Adds word "country" to reciprocity requirements.

Mental Hygiene—Chapter 185. Appropriation for site for new state school.

Chapter 676. Re indigent mental defectives.

Municipal Health—Chapters 65, 117 and 471. Amends town law so as to allow contracts for water supplies.

Chapter 113. Adds section to town law, re dissolution of water districts.

Chapter 302. Adds section to village law, giving trustees power to pass ordinances to remove health hazards.

Chapter 303. Provides for sewer districts in villages.

Chapter 466. Re water districts.

Chapter 476. Adds section to town law re garbage collection districts.

There were also a number of other municipal health acts of purely local interest.

Oysters—Chapter 29. Appropriates $15,000 to investigate sanitary condition of oyster beds. To be done by commissioner of health.

Chapter 350. Amends and adds provisions to conservation law re sanitation of shellfish industry.

Public Health Nursing—Chapter 503. Amends county law, regarding work of public health nurses.

School Hygiene—Chapter 665. Amends education law relative to medical inspection in cities of first class.

Social Hygiene—Chapter 255. Adds new provision to domestic relations law re support of illegitimate children.

Chapters 515 and 558 also re illegitimacy.

Vaccination—Chapter 368. Amends law in minor particular.

Vital Statistics—Chapter 367. Amends law relative to districts, still births, reports of deaths from communicable diseases, fees, and powers of state commissioner of health.

OHIO

Children—Amends law, providing physical and mental examination for children before juvenile court (S. B. 298).

See also tuberculosis.

Dentistry—Adds section to law, requiring re-registration every five years (S. B. 273).

Medical Practice—Adds reciprocity provision to law (H. B. 62).

Amends law re limited practice (H. B. 20).

Municipal Health—Amends law re appropriation of property for municipal improvements (H. B. 400).

Amends law re issuing bonds (H. B. 399).

Sanitation—Amends law re policing of parks (H. B. 167).

Tuberculosis—Amends law re state sanatorium. Provisions for separate treatment of children (S. B. 131).

Amends law re tuberculin testing of cattle (H. B. 287).

Waters—Amends stream pollution law, giving increased control to state health department (H. B. 113). Provisions of this act are outlined in *Engineering News-Record* for April 23, 1925.

OKLAHOMA

No new health legislation.

OREGON

Camp Sanitation—Chapter 137. Provides for sanitation and inspection of automobile tourist camps.

Sterilization—Amends law so as to require report of convictions for certain crimes to state board of eugenics.

Vital Statistics—Requires reporting of marriages to state board of health.

A bill was also introduced relative to physical examinations of school children.

PENNSYLVANIA

County Health—An act authorizing county commissioners to appropriate money for public health work in coöperation with the state.

An act authorizing communities to bear the expenses of delegates to meetings of county public health associations.

Tuberculosis—An act authorizing counties to erect and maintain sanatoria.

An act appropriating $250,000 for the care of those suffering from surgical tuberculosis.

RHODE ISLAND

Maternity—Acceptance of federal act.

Narcotics—Resolution for investigation of problem of drug addiction. A bill relating to control failed.

Vaccination—Requiring all school children in public and parochial schools to present certificates showing successful vaccination.

Venereal Disease—An injunction and abatement law.

A chiropractic act was defeated and amendments to the medical practice act failed of passage.

SOUTH DAKOTA

County Health—Amends law re allowances for presidents and superintendents of county boards of health (H. B. 79).

Maternity—For regulation of maternity homes (S. B. 318).

Ophthalmia Neonatorum—Provisions relating to infant blindness.

VERMONT

Communicable Disease—No. 7. Amends law relating to biological products.

Food—No. 152. For licensing of sale of oleomargarine (see also milk).

Health Officers—No. 108. Amends law relating to appointment of local health officers.

Medical Practice—No. 2. Amends law re board of examiners.

Mental Hygiene—Nos. 105 and 139. Amends laws relating to commitment.

Milk—No. 13. Prohibits introduction of foreign fats into milk and milk products.

Poisons—No. 57. To control use of dangerous caustics, corrosives, acids, etc.

Tuberculosis—No. 113. Re accounts of Washington County Hospital.

Nos. 126 and 127. Eradication of bovine tuberculosis.

Vital Statistics—Nos. 69 and 86. Amend vital statistics and marriage license laws, respectively.

WASHINGTON

Drugless Healing—Providing for revocation of licenses for certain offenses (S. B. 58).

WYOMING

Goiter—Gives state board of health authority to regulate sale of domestic salt used for goiter prevention.

The medical practice act was also amended.

DISTRICT OF COLUMBIA

As previously mentioned in this department, Congress passed laws regulating milk, the venereal diseases, and butter standards.

GENERAL

The information on Iowa and Kansas is taken from the U. S. Children's Bureau's Child Welfare News Summary for June 13, 1925, which gives a report on the 1925 state child welfare legislation.

SUMMARY AND COMMENT

Number of New Laws—In the twenty-five states from which reports have been received, there were passed in 1925, 143 new health laws. For the whole country there were undoubtedly many more. A final report has not yet been received from Illinois, where at least half a dozen measures had passed one house or the other.

Of the 143 new laws, about one-third were enacted in two states. These were New York, which lead with 29, and Minnesota where there were 24. Vermont passed 13 new health measures, Ohio 10, California 9, and Michigan 8. The other states had from one to seven each, while several, such as Indiana and Oklahoma, reported no new health legislation. In the term "new health measures" are also included amendments to existing laws.

Subjects Included—The largest number of new health measures were concerned with food, as nine states passed fifteen such laws. Municipal health legislation of general scope, and not including purely local acts came next. There were fourteen such measures in six states, though eight of them were in New York. Tuberculosis got attention in six states, which passed thirteen laws on this subject. Nine new vital statistics measures were enacted in eight states. County health received recognition by seven measures in five states, and communicable disease control had six new measures in the same number of states. Maternity legislation was also passed in five states. Other subjects were scattering. It is interesting to note how little venereal disease and child hygiene legislation there was, as compared to former years.

Topics of Special Interest—Legislation regarding shellfish pollution was passed in Massachusetts, New York and New Jersey. Bills to control lye and other caustic substances were successful in Minnesota, New Hampshire and Vermont. New sterilization acts were passed in Idaho and Minnesota, while the existing law in Oregon was amended. Other bills on this subject were introduced in Colorado, Illinois, Maine, New Jersey, Ohio and Rhode Island; but apparently were not successful. Public health nursing came in for attention in four states: Kansas, Minnesota, Michigan and New York. A law regulating salt used in the prevention of goiter was passed in Wyoming. Ohio passed a comprehensive amendment to its stream pollution law. Massachusetts authorized a state investigation of the prevalence of cancer.

Bills Not Passed—In computing positive accomplishments in health legislation, the defeat of measures inimical to health administration should also be included. Anti-vaccination and anti-vivisection measures and bills legalizing all kinds of inadequately trained healers are always introduced. Quite generally they were defeated this year, as they usually are, though not always without a struggle.

Some good measures were also not successful as, for instance, a narcotic bill in Arizona, establishment of county health units in Indiana, aid to typhoid carriers in Minnesota, and various other proposals in different states.

CONVENTIONS

This calendar is published through the coöperation of the National Health Council, 370 Seventh Avenue, New York City. The Council will be glad to answer promptly any written or telegraphic inquiries regarding meeting dates in order to avoid conflicts.

August 1–6, American Home Economics Association, San Francisco, Cal.

August 18–22, National Association of Colored Graduate Nurses, Jacksonville, Fla.

August 24–28, General Child Welfare Congress, Geneva, Switzerland.

August 25–28, National Medical Association, Chicago, Ill.

September 5–12, Fourth International Medi-

cal Congress of Industrial Accidents and Diseases, Amsterdam, Holland.

September 8–11, New England Water Works Association, S. S. Richelieu of the Canada Steamship en route to Quebec via the Saguenay River.

September 15–17, Mississippi Valley Conference on Tuberculosis, Lansing, Michigan.

September 16–18, American Association of Obstetricians, Gynecologists, and Abdominal Surgeons, Hot Springs, Va.

September 21–25, American Dental Association, Louisville, Kentucky.

September 28–October 2, National Safety Council, Cleveland, Ohio.

September 28–October 3, Pacific Coast Conference of Health Officials, Long Beach, Cal.

September 28–October 3, Health Officer Sections, League of California Municipalities, Long Beach, Cal.

October 5–10, Playground and Recreation Association of America, Asheville, N. C.

October 8–10, Association of Military Surgeons of the United States, New York City, N. Y.

October 12–15, American National Red Cross, St. Louis, Missouri.

October 12–15, American Dietetic Association, Chicago, Ill.

October 12–15, Southwest Water Works Association, Tulsa, Oklahoma.

October 12–16, Inter-State Graduate Assembly of America, St. Paul, Minn.

October 12–17, American Academy of Ophthalmology & Oto-Laryngology, Chicago, Ill.

October 15–17, American Association of Railway Surgeons, Hotel Sherman, Chicago, Ill.

October 19–22, American Public Health Association, St. Louis, Missouri.

October 19–24, American Hospital Association, Louisville, Kentucky.

October 26–30, American College of Surgeons, Philadelphia, Pa.

October 27–31, American Country Life Association, Richmond, Virginia.

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